

This document gives pertinent information concerning the reissuance of the VPDES Permit listed below. This permit is being processed as a **Minor, Industrial** permit. The discharge is comprised of storm water runoff associated with commercial aircraft operations and activities at Washington Dulles International Airport. This permit action consists of updating the WQS, adding outfalls, and updating boilerplate language. The effluent limitations and special conditions contained in this permit will maintain the Water Quality Standards of 9 VAC 25-260-00 et seq.

1. Facility Name and Mailing Address: Washington Dulles International Airport
P.O. Box 17045
Washington, DC 20041
SIC Code : 4581 – Air Transportation

Facility Location: 44701 Propeller Court
Dulles, VA 20166
Counties: Fairfax and Loudoun

Facility Contact Name: Mr. Brian Leuck
Telephone Number: (703) 572-2800
2. Permit No.: VA0089541
Expiration Date of previous permit: December 20, 2008
Other VPDES Permits associated with this facility: N/A
Other Permits associated with this facility: Air - 70003
Hazardous Waste (RCRA) – VA6690500909
E2/E3/E4 Status: N/A
3. Owner Name: Metropolitan Washington Airports Authority (MWAA)
Owner Contact/Title: Mr. Brian Leuck / Manager - Engineering and Maintenance Department
Telephone Number: (703) 572-2800
4. Application Complete Date: July 7, 2008
Permit Drafted By: Susan Mackert
Date Drafted: September 29, 2008
Permit Drafted By: Susan Mackert
Date Final Draft: April 13, 2009
Draft Permit Reviewed By: Alison Thompson
Date Reviewed: October 16 – 17, 2008
Public Comment Period : Start Date: June 18, 2009
End Date: July 17, 2009
5. Receiving Waters Information: Please see Attachment 1 for outfall descriptions.
Receiving Stream Name : Stallion Branch
Outfall: 001
Receiving Stream Name : Stallion Branch, UT
Outfalls: 002 - 006
Receiving Stream Name : Horsepen Run, UT
Outfalls: 007 - 021
Drainage Area at Outfall: < 1.0 sq.mi.
River Mile: Please see Table 1
Stream Basin: Potomac
Subbasin: Lower Potomac
Section: 9
Stream Class: III
Special Standards: None
Waterbody ID: VAN-A09R
7Q10 Low Flow: 0 MGD
7Q10 High Flow: 0 MGD
1Q10 Low Flow: 0 MGD
1Q10 High Flow: 0 MGD
Harmonic Mean Flow: 0 MGD
30Q5 / 30Q10 Flow: 0 MGD / 0 MGD
303(d) Listed: No – Stallion Branch
No – Stallion Branch, UT
TMDL Approved: No
Date TMDL Due: PCB Fish Consumption – 2018
Aquatic Life Use - 2018
303(d) Listed: No – Horsepen Run, UT

TMDL Approved:	No	Date TMDL Due:	PCB Fish Consumption – 2018 Aquatic Life Use - 2018
Receiving Stream Name :	Cub Run	Outfall:	022
Receiving Stream Name :	Cub Run, UT	Outfalls:	023, 024, 026 - 032
Receiving Stream Name :	Dead Run	Outfall:	025
Drainage Area at Outfall:	< 1.0 sq.mi.	River Mile:	Please see Table 1
Stream Basin:	Potomac	Subbasin:	Lower Potomac
Section:	7a	Stream Class:	III
Special Standards:	g	Waterbody ID:	VAN-A22R
7Q10 Low Flow:	0 MGD	7Q10 High Flow:	0 MGD
1Q10 Low Flow:	0 MGD	1Q10 High Flow:	0 MGD
Harmonic Mean Flow:	0 MGD	30Q5 / 30Q10 Flow:	0 MGD / 0 MGD
303(d) Listed:	Yes – Cub Run		
TMDL Approved:	No	Date TMDL Due:	Bacteria - 2018
303(d) Listed:	No – Dead Run		
TMDL Approved:	No	Date TMDL Due:	N/A

It is staff's best professional judgement that based on a drainage area of 5 sq.mi or less, critical flows will be equal to 0.

6. Statutory or Regulatory Basis for Special Conditions and Effluent Limitations:

<input checked="" type="checkbox"/> State Water Control Law	<input checked="" type="checkbox"/> EPA Guidelines
<input checked="" type="checkbox"/> Clean Water Act	<input checked="" type="checkbox"/> Water Quality Standards
<input checked="" type="checkbox"/> VPDES Permit Regulation	<input type="checkbox"/> Other
<input checked="" type="checkbox"/> EPA NPDES Regulation	

7. Licensed Operator Requirements: N/A

8. Reliability Class: N/A

9. Permit Characterization:

<input type="checkbox"/> Private	<input checked="" type="checkbox"/> Effluent Limited	<input type="checkbox"/> Possible Interstate Effect
<input type="checkbox"/> Federal	<input type="checkbox"/> Water Quality Limited	<input type="checkbox"/> Compliance Schedule Required
<input type="checkbox"/> State	<input type="checkbox"/> Toxics Monitoring Program Required	<input type="checkbox"/> Interim Limits in Permit
<input checked="" type="checkbox"/> Authority	<input type="checkbox"/> Pretreatment Program Required	<input type="checkbox"/> Interim Limits in Other Document
<input type="checkbox"/> POTW	<input checked="" type="checkbox"/> TMDL	

10. Wastewater Sources and Treatment Description:

Washington Dulles International Airport is owned, operated, and maintained by the Metropolitan Washington Airports Authority (MWAA or “Authority”). The Airport consists of a main terminal, midfield concourses, engineering and warehouse buildings, vehicle maintenance shops, fueling stations, utilities buildings, fire and police stations, storage structures, vehicle wash facility, salt and sand storage buildings, and an underground train system with associated maintenance building. The Airport is located within two counties (Fairfax and Loudoun) and encompasses more than 12,000 acres.

9 VAC 25-31-10 defines transportation facilities which have vehicle maintenance shops, equipment cleaning operations or airport deicing operations as a category engaging in industrial activity which thereby requires coverage under a VPDES permit. Per 9 VAC 25-151-260, tenants of the Airport facility include airline passenger or cargo companies, fixed based operators and other parties who have contracts with the Airport authority to conduct business operations on Airport property and whose operations result in storm water discharges associated with industrial activity. Tenants may choose to obtain coverage under their own permit or sign on as a co-permittee with the Airport’s VPDES permit. Washington Dulles International Airport currently has 33 co-permittees. Concurrent with this reissuance, Washington Dulles International Airport is contacting all current tenants to establish or re-establish their status as co-permittees.

The following are areas of concern associated with commercial aircraft operations and activities at Washington Dulles International Airport.

Aircraft, Vehicle and Equipment Maintenance

Major commercial aircraft maintenance is performed by the airlines at other airports where maintenance hangars may be utilized. However, minor maintenance may be conducted at the gate and/or on the apron. General aviation aircraft maintenance is conducted within dedicated maintenance hangars.

Vehicle and heavy equipment maintenance is conducted indoors at the Airport, whenever possible, at dedicated maintenance shops. The Authority currently has three buildings where maintenance activities take place.

- Bus Maintenance Facility - Shuttle bus maintenance is performed at this facility under contract to the Authority.
- Authority Maintenance Shop 1 Building – This building houses one of two Authority vehicle and equipment maintenance shops. Maintenance of buses, fire trucks, mobile lounges, and Plane Mates is performed at this location.
- Authority South Shops Maintenance Complex – This houses the second of two Authority vehicle and equipment maintenance shops. There are several maintenance buildings including equipment storage, metal working shop, paint shop and grounds shop.

Aircraft Fueling

Air BP operates two large Jet fuel farms on site along the eastern border of the facility:

- Fuel Farm – Contains six 2.4 MG ASTs within containment. Any potentially contaminated storm water is treated via an oil-water separator, retention pond, and sluice gates prior to discharge.
- Settling Tank Fuel Farm – Contains three 8.1 MG ASTs within containment, with potential for a fourth 8.1 MG AST in the future. This fuel farm is new with this reissuance and is discussed further within Attachment 1 and Attachment 4. Any potentially contaminated storm water is treated via an oil-water separator prior to discharge.

Air BP also operates and maintains the South Midfield Fueling Station and entire underground hydrant system. Fuel is dispensed from the hydrants through pumper trucks to the aircraft.

Vehicle Fueling

Diesel fuel and gasoline for vehicles are stored at the following Authority locations:

- Authority Shop 1 Building – Two USTs owned and operated by the Authority.
- Authority South Shops – Two ASTs owned and operated by the Authority.
- Bus Maintenance Facility – Four USTs owned by the Authority and operated by the bus maintenance facility contractor.

Fuel is transferred to storage tanks using a closed hose transfer connection. Vehicle fueling takes place at each of the locations listed above. In addition, Authority-owned tank trucks on the ramp and in the gate areas fuel airline support vehicles, including mobile lounges, Plane Mates, and snow removal equipment.

Aircraft Deicing

An aircraft deicing fluid management program continues to be in place at the Airport. To reduce pollutant loadings to the storm water system from the use of deicing fluid, the Authority has issued a contract to recover glycol-contaminated runoff from the ramp areas. Recovered water with a glycol concentration of four percent or greater is stored for recycling. Recovered water with glycol concentrations of less than four percent is stored in a 350,000 gallon aboveground holding tank equipped with a floating aeration system. After treatment, the effluent from the filtration system is discharged to the Blue Plains Wastewater Treatment Plant under District of Columbia Water and Sewer Authority (WASA) permit number 025-7 issued December 2006.

The minimum requirements for the glycol recovery program require the use of drain plugs in most locations throughout the Airport and the removal of the collected runoff by use of vacuum truck. The contract also requires the contractor to provide Glycol Recovery Vehicles (GRV) to remove glycol from the paved areas during frost and storm events. To help reduce glycol from entering the drains where centralized deicing occurs, over 95 drain plugs or inserts have been installed which are closed to facilitate recovery operations. The Authority also works with the snow removal contractor to separate snow with glycol (pink snow) from snow without glycol before it is melted. The impacted snow is segregated at a specified location.

Please see Section 17.c and Section 22 of the Fact Sheet for additional discussion on deicing and glycol use.

Runway Deicing

Federal Aviation Administration (FAA) regulations regulate the amount of deicing / anti-icing product applied to runways. Application areas include four major runways as well as taxiways and taxi lanes leading to these runways. Pavement deicing operations at the Airport make use of potassium acetate liquid for deicing and anti-icing operations. Storage of potassium acetate is as follows:

- Four 20,000 gallons double walled ASTs within secondary containment
- One 10,000 gallon double walled AST
- Two 5,000 gallon double walled ASTs within secondary containment
- Two 12,000 gallon doubled walled ASTs within secondary containment

Additionally, new potassium acetate tanks are to be built at Runway 4. Please see Section 17.c and Section 22 of the Fact Sheet for additional discussion on deicing and glycol use.

Vehicle Washing

Outdoor washing of vehicles is prohibited by the Airport unless a wash water collection and reclamation system is provided or runoff is directed to the sanitary sewer. Vehicle washing is conducted at several Authority operated indoor locations. Closed loop systems are in place for the heavy vehicle wash facility and the underground train car wash facility with discharge to the sanitary sewer system. Airport shuttle buses are washed inside of the bus maintenance facility which has a closed loop recycling system. Mobile lounges are washed outside of Shop 1 where a wash water collection and reclamation system is provided or runoff is directed to the sanitary sewer system.

Material Loading and Unloading

Bulk material loading and unloading primarily takes place within the hangars, cargo bays, Authority shops and buildings, the salt and sand storage building, and construction sites. Floor drains located within these areas are connected to the sanitary sewer system.

Storage Activities

Chemical, oils, used oils, fuels, and paints are stored indoors or outdoors in 55-gallon drums and aboveground storage tanks. Other materials such as cleaners, paints, and paint related products are stored in containers either located indoors and outdoors, either on the ground or in cabinets. All chemical storage practices conform to the Authority's pollution prevention requirements which include secondary containment for all chemical storage.

Aqueous Film-Forming Foam (AFFF)

AFFF is used to arrest or prevent fires that occur during fueling operations on the flight line, hangars or at the fuel farm as well as emergency landings where there is a potential for fire and aircraft crashes. AFFF is also located at the fuel settling tank farm. AFFF is a relatively non-biodegradable, butyl-carbitol based material that is toxic to biological treatment and receiving streams.

When AFFF systems are tested or annual fire fighting training is conducted in accordance with FAA regulations, the runoff is land applied in such a manner to prevent discharge to storm drains. In the event of an emergency on the airfield or hanger spaces, any AFFF used will be discharged to storm drains. Per 9 VAC 25-151-50, such emergency situations are exempt from VPDES regulation. However, if practicable, the Authority will take actions to mitigate the effects of AFFF runoff on receiving water quality.

See Attachment 2 for the NPDES Permit Rating Worksheet.

A facility site map showing all outfall locations was provided by the facility. This site map shows outfall locations as of the date of the application package and is found as Attachment 3. All outfalls are located within the Herndon, DEQ #205B topographic quadrangle.

TABLE 1 – Outfall Description

Outfall Number	Discharge Sources	Treatment	Average Flow	Outfall Latitude and Longitude	River Mile
001	Industrial Storm Water	None	Variable	38° 56' 42.9? N 77° 27' 40.3? W	STA002.87
002	Industrial Storm Water	None	Variable	38° 56' 49.2? N 77° 27' 38.6? W	XJW000.27
003	Industrial Storm Water	None	Variable	38° 56' 49.9? N 77° 27' 38.5? W	XJW000.28

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004	Industrial Storm Water	None	Variable	38° 57' 17.6? N 77° 27' 37.8? W	XJW000.49
005	Industrial Storm Water	None	Variable	38° 57' 32.9? N 77° 27' 37.7? W	XJY000.22
006	Industrial Storm Water	None	Variable	38° 58' 13.4? N 77° 27' 45.1? W	XJZ000.18
007	Industrial Storm Water	Oil-Water Separator	Variable	38° 58' 10.4? N 77° 27' 18.1? W	XKA000.09
008	Industrial Storm Water	None	Variable	38° 57' 08.5? N 77° 27' 17.6? W	XKA000.96
009	Industrial Storm Water	Oil-Water Separator	Variable	38° 57' 48.2? N 77° 27' 18.5? W	XKA001.34
010	Industrial Storm Water	Oil-Water Separator	Variable	38° 57' 45.8? N 77° 27' 18.8? W	XKA001.40
011	Industrial Storm Water	Oil-Water Separator	Variable	38° 57' 40.1? N 77° 27' 18.7? W	XKA001.51
012	Industrial Storm Water	Oil-Water Separator	Variable	38° 57' 34.6? N 77° 27' 18.7? W	XKA001.60
013	Industrial Storm Water	None	Variable	38° 57' 31.1? N 77° 27' 18.7? W	XKA001.68
014	Industrial Storm Water	Oil-Water Separator	Variable	38° 57' 30.6? N 77° 27' 18.6? W	XKA001.69
015	Industrial Storm Water	None	Variable	38° 57' 29.9? N 77° 27' 18.4? W	XKA001.70
016	Industrial Storm Water	Oil-Water Separator	Variable	38° 57' 29.2? N 77° 27' 19.0? W	XKA001.72
017	Industrial Storm Water	Oil-Water Separator	Variable	38° 58' 14.7? N 77° 27' 07.6? W	XKB000.14
018	Industrial Storm Water	None	Variable	38° 58' 19.0? N 77° 26' 48.8? W	XKC000.15
019	Industrial Storm Water	None	Variable	38° 56' 55.2? N 77° 26' 05.5? W	XKD000.18
020	Industrial Storm Water	Detention Pond / Sluice Gates / Oil-Water Separator	Variable	38° 56' 46.2? N 77° 25' 48.4? W	XKE000.04
021	Industrial Storm Water	Oil-Water Separator	Variable	38° 56' 22.8? N 77° 25' 50.5? W	XKE000.48
022	Industrial Storm Water	None	Variable	38° 56' 15.3? N 77° 26' 26.5? W	CUB014.2
023	Industrial Storm Water	None	Variable	38° 55' 59.7? N 77° 26' 26.6? W	XKF000.11
024	Industrial Storm Water	None	Variable	38° 55' 50.7? N 77° 26' 26.5? W	XKG000.20
025	Industrial Storm Water	None	Variable	38° 55' 22.4? N 77° 26' 26.9? W	DED001.59

026	Industrial Storm Water	None	Variable	38° 57' 05.2? N 77° 27' 17.7? W	XKH000.40
027	Industrial Storm Water	None	Variable	38° 55' 52.1? N 77° 27' 40.3? W	XKI000.55
028	Industrial Storm Water	None	Variable	38° 56' 18.8? N 77° 28' 32.7? W	XKK000.17
029	Industrial Storm Water	None	Variable	38° 56' 23.2? N 77° 28' 46.7? W	XKL000.11
030	Industrial Storm Water	None	Variable	38° 55' 42.9? N 77° 27' 04.9? W	XKM000.01
031	Industrial Storm Water	None	Variable	38° 56' 0.98? N 77° 27' 17.3? W	Not Available
032	Industrial Storm Water	Oil-Water Separator	Variable	38° 56' 18.8? N 77° 28' 32.7? W	Not Available

11. Sludge Treatment and Disposal Methods:

Washington Dulles International Airport does not treat domestic sewage and does not produce sewage sludge. All domestic wastewater generated on site or removed from arriving aircraft is discharged to the Blue Plains WWTP.

12. Discharges, Intakes, Monitoring Stations, Other Items in Vicinity of Discharge

TABLE 2 The facilities and monitoring stations listed below either discharge to or are located within the following waterbody: VAN-A09R	
1AHPR003.87	DEQ ambient water quality monitoring station located on Dulles Airport Access Road
1ABRB002.15	DEQ benthic macroinvertebrate monitoring station located on Broad Run
1ABRB006.97	DEQ benthic macroinvertebrate monitoring station located on Broad Run
1ABRB006.33	DEQ ambient water quality monitoring station located on Broad Run (Route 625)
VAG750168	Exxon – Ryan Center Way
VAG840095	Loudoun Quarries Division
VAG110067	Hard Rock Concrete LLC
VAG110084	Virginia Concrete – Sterling Plant
VAG110088	Virginia Concrete – Sterling Plant
VAG110103	Titan Virginia Ready Mix LLC - Sterling
VAG110236	Lane Construction Corporation – Portable Concrete 1
VAR050906	Trowbridge Steel Company, Inc.
VAR050922	Virginia Paving Company – Loudoun Plant
VAR051068	U.S. Postal Service – Dulles (Sterling Vehicle Maintenance)
VAR051145	DDI - Virginia
VAR051661	Security Storage Company of Washington – Dulles Warehouse
VA0021733	Arcola Elementary School

VA0091383	Broad Run Water Reclamation Facility
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TABLE 3 The facilities and monitoring stations listed below either discharge to or are located within the following waterbody: VAN-A22R	
1ACUB008.60	DEQ ambient water quality monitoring station located on Cub Run (Route 661 -Old Lee Highway)
1ACUB-CR3-SOS	Citizen monitoring station located on Cub Run
1ACUB002.61	DEQ ambient and fish tissue/sediment monitoring station located on Cub Run (Route 658)
1ACUB003.74	DEQ ambient monitoring station located on Cub Run (Route 29/211)
1ACUB-CR1-SOS	Citizen monitoring station located on Cub Run
VAG406171	Deli O Texaco
VAG406265	Chantilly Truck Stop
VAG830019	Fair Oaks Church
VAG840106	Chantilly Crushed Stone, Inc.
VAG110089	Virginia Concrete Company, Inc. - Chantilly
VAG110094	DuBrook Concrete - Loudoun
VAG110096	Atlantic Contracting and Material Company, Inc.
VAR050863	Virginia Paving Company - Chantilly
VAR051036	UPS – Dulles Center
VAR051773	Fairfax County – West Ox Road Maintenance Facility
VAR051813	AAA Disposal Service, Inc.
VA0024988	UOSA - Centreville
VA0090441	Adaptive Concrete Solutions
VA0091430	Loudoun Composting

13. Material Storage:

A table indicating the types of materials stored on site, method of disposal and management practices in place to minimize exposure to precipitation (cover and/or containment) was provided with the application. This information is found within the permit reissuance file.

14. Site Inspection:

Performed by Susan Mackert on July 27, July 28, September 3, and October 2, 2008. The inspections confirm that the application package received on June 19, 2008 is accurate and representative of actual site conditions. Details of the site visit are included with the outfall specific information found in Attachment 4.

15. Receiving Stream Water Quality and Water Quality Standards:**a) Ambient Water Quality Data**

The Airport property is divided into eleven storm drainage areas with discreet surface water discharge points. The primary receiving streams for Airport storm water discharges are Horsepen Run, Stallion Branch, Cub Run, and Dead Run. As such, water quality data for each receiving stream is detailed below. The complete planning statement is located within the reissuance file.

1) Horsepen Run

There is no monitoring data available for unnamed tributaries to Horsepen Run; however there is monitoring data for Horsepen Run (DEQ ambient water quality monitoring station 1AHPR003.87 - Dulles Airport Access Road). According to the 2008 305(b)/303(d) Virginia Water Quality Integrated Assessment, the aquatic life and wildlife uses are considered fully supporting. There was one exceedance in seven fecal coliform bacteria sampling events and as such, there is insufficient information to determine support for the recreation use. The fish consumption use was not assessed.

The receiving assessment unit is not listed on the current 303(d) list. However, there are downstream impairments on Broad Run which receives flow from Horsepen Run.

- The fish consumption use is categorized as impaired due to a Virginia Department of Health, Division of Health Hazards Control, PCB fish consumption advisory. The advisory, dated 12/13/04, limits American eel consumption to no more than two meals per month. The affected area includes the following tributaries in the Potomac River basin between the VA/MD state line near the Route 340 bridge (Loudoun County) to the I-395 bridge (Arlington County); Goose Creek to the Dulles Greenway Road Bridge, Broad Run to the Route 625 bridge, Difficult Run to the Route 7 bridge, and Pimmit Run to the Route 309 bridge.
- DEQ benthic macroinvertebrate biological monitoring at station 1ABRB002.15 (Near Route 7) and station 1ABRB006.97 finds this segment to be moderately impaired, resulting in an impaired classification for the aquatic life use. This impaired segment begins at the confluence of Horsepen Run, and continues downstream until the confluence with the Potomac River.

The following Total Maximum Daily Load (TMDL) schedule has been established.

- Fish Consumption – Due 2018
- Aquatic Life Use – Due 2018

2) Stallion Branch

There is no monitoring data available for unnamed tributaries to Stallion Branch or Stallion Branch. The nearest Department of Environmental Quality downstream ambient water quality monitoring station (1ABRB006.33) is located at the Route 625 bridge crossing at Broad Run.

The receiving assessment unit is not listed on the current 303(d) list. However, there are downstream impairments as Stallion Branch flows into Horsepen Run which flows into Broad Run.

- The fish consumption use is categorized as impaired due to a Virginia Department of Health, Division of Health Hazards Control, PCB fish consumption advisory. The advisory, dated 12/13/04, limits American eel consumption to no more than two meals per month. The affected area includes the following tributaries in the Potomac River basin between the VA/MD state line near the Route 340 bridge (Loudoun County) to the I-395 bridge (Arlington County); Goose Creek to the Dulles Greenway Road Bridge, Broad Run to the Route 625 bridge, Difficult Run to the

Route 7 bridge, and Pimmit Run to the Route 309 bridge.

- DEQ benthic macroinvertebrate biological monitoring at station 1ABRB002.15 (Near Route 7) and station 1ABRB006.97 finds this segment to be moderately impaired, resulting in an impaired classification for the aquatic life use. This impaired segment begins at the confluence of Horsepen Run, and continues downstream until the confluence with the Potomac River.

The following Total Maximum Daily Load (TMDL) schedule has been established.

- Fish Consumption – Due 2018
- Aquatic Life Use – Due 2018

3) Cub Run

There is no monitoring data available for unnamed tributaries to Cub Run; however there is monitoring data for Cub Run (DEQ ambient water quality monitoring station 1ACUB008.60 – Route 661 and citizen monitoring station 1ACUB-CR3-SOS). According to the 2008 305(b)/303(d) Virginia Water Quality Integrated Assessment, citizen monitoring finds a high probability of adverse conditions for biota resulting in a designation of fully supporting with an observed effect for the aquatic life use. The wildlife use is considered fully supporting. The fish consumption and recreation uses were not assessed.

There is additional monitoring data downstream on Cub Run at DEQ ambient and fish tissue/sediment monitoring station 1ACUB002.61 – Route 658, DEQ ambient monitoring station 1ACUB003.74 – Route 29/211 and citizen monitoring station 1ACUB-CR1-SOS. The 2008 305(b)/303(d) Virginia Water Quality Integrated Assessment lists this segment of Cub Run as not supporting of the recreation use goal based on sufficient excursions of the instantaneous *E. coli* criterion (4 of 19 samples – 21.0%). Excursions were measured at DEQ ambient water quality station 1ACUB002.61 – Route 658 crossing.

Exceedances of the water quality criterion based tissue value (TV) of 54 ppb for PCBs and 300 ppb for mercury in fish tissue were recorded in one specie of fish samples (flathead catfish) collected in 2004 at monitoring station 1ACUB002.61. The fish consumption use is classified as fully supporting with observed effects. The aquatic life and wildlife uses are fully supporting; however, the aquatic life is noted with an observed effect. Citizen monitoring finds a high probability of adverse conditions for biota.

There are further downstream impairments of Bull Run as this segment receives flow from Cub Run.

- The fish consumption use is categorized as impaired due to a Virginia Department of Health, Division of Health Hazards Control, PCB fish consumption advisory. The advisory, dated 12/13/04, limits carp and channel catfish consumption to no more than two meals per month. The affected area includes Bull Run near Manassas Park from the I-66 bridge downstream approximately 14 miles to the Route 612 bridge (Yates Ford Road).
- Two biological monitoring events in 2005 (1aBUL009.61), two biological events in 2004 (1aBUL010.28), and two biological monitoring events in 2005 (1aBUL011.12) each resulted in a VSCI score which indicates an impaired macroinvertebrate community.

The following Total Maximum Daily Load (TMDL) schedule has been established.

- Fish Consumption – Due 2016 (Bull Run)
- *E. coli* – Due 2018 (Cub Run)

4) Dead Run

There is no monitoring data available for unnamed tributaries to Dead Run or Dead Run. The nearest Department of Environmental Quality downstream ambient water quality monitoring station (1ACUB008.60) is located at Route 661 at Cub Run.

The receiving assessment unit is not listed on the current 303(d) list. However, there are downstream impairments on Cub Run which receives flow from Dead Run.

- Sufficient excursions from the instantaneous *E. coli* bacteria criterion (4 of 19 samples – 21.0%) were recorded at DEQ ambient water quality station 1ACUB002.61 – Route 658 crossing. This stream segment is assessed as not supporting of the recreation use goal for the 2008 water quality assessment.

There are further downstream impairments of Bull Run as this segment receives flow from Cub Run.

- The fish consumption use is categorized as impaired due to a Virginia Department of Health, Division of Health Hazards Control, PCB fish consumption advisory. The advisory, dated 12/13/04, limits carp and channel catfish consumption to no more than two meals per month. The affected area includes Bull Run near Manassas Park from the I-66 bridge downstream approximately 14 miles to the Route 612 bridge (Yates Ford Road).
- Two biological monitoring events in 2005 (1aBUL009.61), two biological events in 2004 (1aBUL010.28), and two biological monitoring events in 2005 (1aBUL011.12) each resulted in a VSCI score which indicates an impaired macroinvertebrate community.

The following Total Maximum Daily Load (TMDL) schedule has been established.

- Fish Consumption – Due 2016 (Bull Run)
- *E. coli* – Due 2018 (Cub Run)

b) Receiving Stream Water Quality Criteria

Part IX of 9 VAC 25-260(360-550) designates classes and special standards applicable to defined Virginia river basins and sections. The receiving streams, Stallion Branch, UT to Stallion Branch, and UT to Horsepen Run, are located within Section 9 of the Potomac River Basin, and classified as Class III waters. The receiving streams, Cub Run, UT to Cub Run, and Dead Run, are located within Section 7a of the Potomac River Basin, and classified as Class III waters.

At all times, Class III waters must achieve a dissolved oxygen (D.O.) of 4.0 mg/L or greater, a daily average D.O. of 5.0 mg/L or greater, a temperature that does not exceed 32°C, and maintain a pH of 6.0-9.0 standard units (S.U.).

Attachment 5 details other water quality criteria applicable to the receiving stream.

Ammonia:

Ammonia is not a parameter of concern due to the fact the discharge is industrial in nature and there is no reasonable potential to exceed the ammonia criteria. Therefore, it is staff's best professional judgement that ammonia limits need not be developed for this discharge.

Metals Criteria:

The 7Q10s of the receiving stream are zero, no ambient data is available, and there is no hardness data for this facility. Staff guidance suggests using a default hardness value of 50 mg/l CaCO₃ for streams east of

the Blue Ridge. The hardness-dependent metals criteria in Attachment 5 are based on this in-stream value. Although not required for calculating metals criteria, a default temperature value of 25°C and a default pH value of 8.0 S.U. is found within Attachment 5.

c) Receiving Stream Special Standards

The State Water Control Board's Water Quality Standards, River Basin Section Tables (9 VAC 25-260-360, 370 and 380) designates the river basins, sections, classes, and special standards for surface waters of the Commonwealth of Virginia. The receiving streams, Stallion Branch, UT to Stallion Branch, and UT to Horsepen Run, are located within Section 9 of the Potomac River Basin. This section has not been designated with any special standards.

The State Water Control Board's Water Quality Standards, River Basin Section Tables (9 VAC 25-260-360, 370 and 380) designates the river basins, sections, classes, and special standards for surface waters of the Commonwealth of Virginia. The receiving streams, Cub Run, UT to Cub Run, and Dead Run, are located within Section 7a of the Potomac Basin. This section has been designated with a special standard of "g".

Special Standard "g" refers to the Occoquan Watershed policy (9 VAC 25-410). The regulation sets stringent treatment and discharge requirements in order to improve and protect water quality, particularly since the waters are an important water supply for Northern Virginia. The regulation generally prohibits new STPs and only allows minor industrial discharges. Special standard "g" is not applied to discharges from Washington Dulles International Airport as the discharges are industrial storm water in nature and do not contain domestic wastewater sources.

d) Threatened or Endangered Species

Based on a Memorandum of Understanding (MOU) addressing VPDES permits regulating point source discharges into State waters, a review for species and habitat protected by the Virginia Endangered Species Act was requested by the Department of Conservation and Recreation (DCR) and the Department of Game and Inland Fisheries (DGIF). The Virginia DGIF Fish and Wildlife Information System Database was searched for records to determine if there are threatened or endangered species in the vicinity of the discharge from Outfalls 004, 011, 025, 027 and 030 (those outfalls identified by DCR and DGIF as needing coordination). The following threatened or endangered species were identified within a 2 mile radius of the discharges: Brook Floater, Wood Turtle, Upland Sandpiper, Loggerhead Shrike, Henslow's Sparrow, Appalachian Grizzled Skipper, Bald Eagle, Green Floater and Migrant Loggerhead Shrike. The limits proposed in this draft permit are protective of the Virginia Water Quality Standards and therefore, protect the threatened and endangered species found near the discharges.

The project review reports are available within the permit reissuance file.

16. Antidegradation (9 VAC 25-260-30):

All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The receiving stream has been classified as Tier 1 since the 7Q10 flows are zero and storm water runoff comprises most of the discharge. The permit limits and monitoring endpoints proposed have been established by determining wasteload allocations which will result in attaining and/or maintaining all water quality criteria which apply to the receiving stream, including narrative criteria. These wasteload allocations will provide for the protection and maintenance of all existing uses.

17. Effluent Screening, Wasteload Allocation, and Effluent Limitation Development :

To determine water quality-based effluent limitations for a discharge, the suitability of data must first be determined. Data is suitable for analysis if one or more representative data points is equal to or above the quantification level ("QL") and the data represent the exact pollutant being evaluated.

Next, the appropriate Water Quality Standards (WQS) are determined for the pollutants in the effluent. Then, the Wasteload Allocations (WLA) are calculated. In this case since the critical flows 7Q10 and 1Q10 have been determined to be zero, the WLA's are equal to the WQS. The WLA values are then compared with available effluent data to determine the need for effluent limitations. Effluent limitations are needed if the 97th percentile of the daily effluent concentration values is greater than the acute wasteload allocation or if the 97th percentile of the four-day average effluent concentration values is greater than the chronic wasteload allocation. Effluent limitations are based on the most limiting WLA, the required sampling frequency, and statistical characteristics of the effluent data.

a) Effluent Screening:

Effluent data obtained from the permit application and DMR submissions has been reviewed and determined to be suitable for evaluation. The following parameters require limits or monitoring endpoints: Propylene Glycol, TPH, BOD₅, COD, TSS, TKN, and pH.

b) Mixing Zones and Wasteload Allocations (WLAs):

Wasteload allocations (WLAs) are calculated for those parameters in the effluent with the reasonable potential to cause an exceedance of water quality criteria. The basic calculation for establishing a WLA is the steady state complete mix equation:

$$WLA = \frac{C_o [Q_e + (f) (Q_s)] - [(C_s) (f) (Q_s)]}{Q_e}$$

Where:

WLA	=	Wasteload allocation
C _o	=	In-stream water quality criteria
Q _e	=	Design flow
Q _s	=	Critical receiving stream flow (1Q10 for acute aquatic life criteria; 7Q10 for chronic aquatic life criteria; harmonic mean for carcinogen-human health criteria; and 30Q5 for non-carcinogen human health criteria)
f	=	Decimal fraction of critical flow
C _s	=	Mean background concentration of parameter in the receiving stream.

The water segments receiving discharge via all outfalls within this permit are considered to have a 7Q10 and 1Q10 of 0.0 MGD. As such, there are no mixing zones and the WLAs are equal to the C_o.

c) Effluent Limitations - Toxic Pollutants

9 VAC 25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Those parameters with WLAs that are near effluent concentrations are evaluated for limits.

The VPDES Permit Regulation at 9 VAC 25-31-230.D. requires that monthly and weekly average limitations be imposed for continuous discharges from POTWs and monthly average and daily maximum limitations be imposed for all other continuous non-POTW discharges.

1) Propylene Glycol:

The deicing and/or anti-icing of aircraft and airfield surfaces is required by the FAA. As such, the airline tenants and ground service companies at Washington Dulles International Airport perform deicing and/or anti-icing activities using Propylene Glycol. Deicing and/or anti-icing activities typically occur between the months of October and April. However, deicing and/or anti-icing can take place at any time if requested by the aircraft pilot.

Aircraft deicers (ADFs) are categorized into four classes: Type I, Type II, Type III, and Type IV. Per the annual report submitted by the Airport in June 2008, Type I and Type IV fluids were utilized. Type I fluids are used primarily for aircraft deicing, and Type IV fluids are used for aircraft anti-icing. Both types of fluids contain Propylene Glycol as well as water and a proprietary formulation of additives.

In 1994, the Canadian Environmental Protection Act (CEPA) promulgated a voluntary glycol guideline for deicing practices. The glycol guideline established under CEPA sets a 100 mg/L limit for total glycol allowed at the point of discharge. It is based on the prevention of all impacts to aquatic life as determined by an assessment of available information on impacts of glycols and their associated deicing/anti-icing fluids and a review by a multi-stakeholder working group.

Data gathered determined that the 48-hour lowest concentration at which effects were observed (LOEC) for growth inhibition in *Chilomonas paramecium* was 112 mg/L of ethylene glycol. Following standard practices, a safety factor of 0.1 was applied to this lowest effect concentration to derive an acceptable concentration of approximately 10 mg/L. A safety factor is applied to account for the uncertainties associated with species-to-species and laboratory-to-field extrapolations. The concentration was then converted to a discharge concentration assuming an “end of pipe” dilution ratio of 1:10, resulting in the guideline of 100 mg/L.

A review of VA-DEQ Guidance Memo 96-001 recommends that chemical water quality-based limits not be placed on storm water outfalls because the methodology for developing limits and the proper method of sampling is still a concern and under review by EPA. Therefore, in the interim, monitoring end points (i.e., benchmark concentrations) are identified for those pollutants that should be given special emphasis during development of the Storm Water Pollution Prevention Plan (SWPPP).

Should storm water data exceed monitoring end points, the permittee shall reexamine the effectiveness of the SWPPP and any best management practices (BMPs) in use.

For the purpose of this reissuance, the monitoring end point of 100 mg/L for Propylene Glycol shall be carried forward and deemed a performance target concentration. A performance target concentration is being established to provide specificity with regard to the development and implementation of the Deicing Management and Monitoring Plan (as discussed in Section 22 of the Fact Sheet). The performance target concentration is not intended to serve in lieu of an effluent limit. An exceedance of the performance target concentration does not in and of itself constitute a permit violation.

Sampling frequencies are based on the level of deicing and/or anti-icing activities within the drainage area. Those outfalls which have the greatest potential for Propylene Glycol to be present in the discharge shall be sampled on a more frequent basis than those which have less potential for Propylene Glycol to be present. Please see Attachment 4 for a detailed description of monitoring and reporting requirements for each outfall.

d) Effluent Monitoring / Effluent Limits – Conventional and Non-Conventional Storm Water Pollutants1) Total Petroleum Hydrocarbons (TPH)

Based on the frequency of fueling activities, as well as the quantities of fuel dispensed, fuel spills represent a reasonable potential for contamination of storm water quality. As such, monitoring for TPH shall be carried forward with this reissuance. Sampling frequencies are based on the level of fueling activities and/or maintenance within the drainage area. Please see Attachment 4 for a detailed description of monitoring and reporting requirements for each outfall.

A review of VA-DEQ Guidance Memo 96-001 recommends that chemical water quality-based limits not be placed on storm water outfalls because the methodology for developing limits and the proper method of sampling is still a concern and under review by EPA. Therefore, in the interim, monitoring end points (i.e., benchmark concentrations) are identified for those pollutants that should be given special emphasis during development of the Storm Water Pollution Prevention Plan (SWPPP).

Should storm water data exceed monitoring end points, the permittee shall reexamine the effectiveness of the SWPPP and any best management practices (BMPs) in use.

A monitoring end point of 15 mg/L for TPH shall be implemented with this reissuance. This value is consistent with TPH values found within Sector S (Air Transportation) of the 2009 VPDES General Permit for Storm Water Discharges Associated with Industrial Activity. Total Petroleum Hydrocarbons shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW-141 (1995), or by EPA SW-846 Method 8015C for diesel range organics, or by EPA SW-846 Method 8270D. If Method 8270D is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons.

2) Biochemical Oxygen Demand (BOD₅)

The use of Propylene Glycol for deicing and/or anti-icing of aircraft and the use of Potassium Acetate for deicing and/or anti-icing runways and taxiways represent a reasonable potential for contamination of storm water quality as both exert a high oxygen demand on the receiving waters. As such, monitoring for BOD₅ shall be carried forward with this reissuance. Sampling frequencies are based on the level of deicing and/or anti-icing within the drainage area. Please see Attachment 4 for a detailed description of monitoring and reporting requirements for each outfall.

A review of VA-DEQ Guidance Memo 96-001 recommends that chemical water quality-based limits not be placed on storm water outfalls because the methodology for developing limits and the proper method of sampling is still a concern and under review by EPA. Therefore, in the interim, monitoring end points (i.e., benchmark concentrations) are identified for those pollutants that should be given special emphasis during development of the Storm Water Pollution Prevention Plan (SWPPP).

Should storm water data exceed monitoring end points, the permittee shall reexamine the effectiveness of the SWPPP and any best management practices (BMPs) in use.

A monitoring end point of 30 mg/L for BOD₅ shall be carried forward with this reissuance. This value is consistent with the benchmark monitoring requirements for BOD₅ found within Sector S (Air Transportation) of the 2009 General Permit for Storm Water Discharges Associated with Industrial Activity.

3) Chemical Oxygen Demand (COD)

The use of Propylene Glycol for deicing and/or anti-icing represents a reasonable potential for contamination of storm water quality as it exerts a high oxygen demand on the receiving waters. As such, monitoring for COD shall be carried forward with this reissuance. Sampling frequencies are based on the level of deicing and/or anti-icing within the drainage area. Please see Attachment 4 for a detailed description of monitoring and reporting requirements for each outfall.

A review of VA-DEQ Guidance Memo 96-001 recommends that chemical water quality-based limits not be placed on storm water outfalls because the methodology for developing limits and the proper method of sampling is still a concern and under review by EPA. Therefore, in the interim, monitoring end points (i.e., benchmark concentrations) are identified for those pollutants that should be given special emphasis during development of the Storm Water Pollution Prevention Plan (SWPPP).

Should storm water data exceed monitoring end points, the permittee shall reexamine the effectiveness of the SWPPP and any best management practices (BMPs) in use.

A monitoring end point of 120 mg/L for COD shall be carried forward with this reissuance. This value is consistent with the benchmark monitoring requirements for COD found within Sector S (Air Transportation) of the 2009 VPDES General Permit for Storm Water Discharges Associated with Industrial Activity.

4) Total Suspended Solids (TSS)

A Benthic Total Maximum Daily Load (TMDL) was approved by the U.S. EPA on September 26, 2006 for Bull Run. Although storm water runoff from the Airport does not discharge directly to Bull Run, the TMDL took in to account all upstream point source discharges. The area associated with the WLA for the Airport took into account only that portion of the Airport property that drains into the Cub Run and Dead Run watersheds. Thus, the WLA only applies to the eleven outfalls that discharge to the Cub Run/Dead Run drainage areas. The Airport was given a Benthic TMDL WLA of 275.1 tons/year of TSS. As such, monitoring for TSS shall be carried forward with this reissuance. Additionally, with this reissuance a quarter of the TSS samples shall now be collected during a storm event in order to characterize the discharge. An annual estimate of TSS load (tons/year) at SS002 (Cub Run) shall be provided within the Annual Report.

EPA's NPDES regulations at 40 CFR 122.44(k) allow permits to use non-numeric, BMP-based WQBELs under certain conditions. The regulation, in subsections 3 and 4, states that BMP based WQBELs can be used where "Numeric effluent limitations are infeasible; or the practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA."

It is staff's best professional judgement that with this reissuance non-numeric WQBELs be used to comply with the WLA provisions of the TMDL as BMPs are appropriate and reasonably necessary to achieve water quality standards and to carry out the goals of the CWA for the Bull Run TSS TMDL. BMPs implemented by the Airport shall focus on TSS source tracking and elimination at the source, rather than end-of-pipe controls.

A review of VA-DEQ Guidance Memo 96-001 recommends that chemical water quality-based limits not be placed on storm water outfalls because the methodology for developing limits and the proper method of sampling is still a concern and under review by EPA. Therefore, in the interim, monitoring end points (i.e., benchmark concentrations) are identified for those pollutants that should be given special emphasis during development of the Storm Water Pollution Prevention Plan (SWPPP).

Should storm water data exceed monitoring end points, the permittee shall reexamine the effectiveness of the SWPPP and any best management practices (BMPs) in use.

A monitoring end point of 100 mg/L for TSS shall be carried forward with this reissuance. This value is consistent with the benchmark monitoring requirements for TSS found within Sector S (Air Transportation) of the 2009 VPDES General Permit for Storm Water Discharges Associated with Industrial Activity.

It is staff's belief that the use of non-numeric, BMP-based WQBELs and a monitoring end point of 100 mg/L (the allocated load was calculated based on a TSS concentration of 100 mg/L) is sufficient to achieve water quality standards and to carry out the goals of the CWA for the Bull Run TSS TMDL.

Please see Attachment 4 for a detailed description of monitoring and reporting requirements for each outfall.

5) Total Kjeldahl Nitrogen (TKN)

The 2004 VPDES General Permit for Storm Water Discharges Associated with Industrial Activity requires those air transportation facilities generally classified under SIC Code 45 to conduct monitoring for TKN. To provide consistency with the VPDES General Permit for Storm Water Discharges Associated with Industrial Activity, monitoring for TKN shall be implemented with this reissuance.

A review of VA-DEQ Guidance Memo 96-001 recommends that chemical water quality-based limits not be placed on storm water outfalls because the methodology for developing limits and the proper method of sampling is still a concern and under review by EPA. Therefore, in the interim, monitoring end points (i.e., benchmark concentrations) are identified for those pollutants that should be given special emphasis during development of the Storm Water Pollution Prevention Plan (SWPPP).

Should storm water data exceed monitoring end points, the permittee shall reexamine the effectiveness of the SWPPP and any best management practices (BMPs) in use.

A monitoring end point of 1.5 mg/L for TKN shall be implemented with this reissuance. This value is consistent with the benchmark monitoring requirements for TKN found within Sector S (Air Transportation) of the 2009 VPDES General Permit for Storm Water Discharges Associated with Industrial Activity.

Please see Attachment 4 for a detailed description of monitoring and reporting requirements for each outfall.

6) pH

A review of VA-DEQ Guidance Memo 96-001 recommends that chemical water quality-based limits not be placed on storm water outfalls because the methodology for developing limits and the proper method of sampling is still a concern and under review by EPA. Therefore, in the interim, monitoring end points (i.e., benchmark concentrations) are identified for those pollutants that should be given special emphasis during development of the Storm Water Pollution Prevention Plan (SWPPP).

Should storm water data exceed monitoring end points, the permittee shall reexamine the effectiveness of the SWPPP and any best management practices (BMPs) in use.

A monitoring end point range of 6.0 S.U. – 9.0 S.U. shall be carried forward with this reissuance. This value is consistent with pH ranges found within Sector S (Air Transportation) of the 2009 VPDES General Permit for Storm Water Discharges Associated with Industrial Activity and within the Virginia Water Quality Standards at 9 VAC 25-260.

Please see Attachment 4 for a detailed description of each outfall's monitoring requirements and frequencies.

7) Conductivity

The use of Propylene Glycol for deicing and/or anti-icing represents a reasonable potential for contamination of storm water quality as it exerts a high oxygen demand on the receiving waters. As such, monitoring for conductivity shall be carried forward with this reissuance. Sampling frequencies are based on the level of deicing and/or anti-icing within the drainage area. Please see Attachment 4 for a detailed description of monitoring and reporting requirements for each outfall.

8) Dissolved Oxygen (DO)

The use of Propylene Glycol for deicing and/or anti-icing represents a reasonable potential for contamination of storm water quality as it exerts a high oxygen demand on the receiving waters. The Airport is already conducting monitoring for DO and reporting the results with their Annual Report. With this reissuance, results of DO monitoring shall be reported on the Discharge Monitoring Report (DMR) for the period in which sampling was conducted. Sampling frequencies are based on the level of deicing and/or anti-icing within the drainage area. Please see Attachment 4 for a detailed description of monitoring and reporting requirements for each outfall.

e) Effluent Monitoring – Storm Water Only Pollutants

A review of VA-DEQ Guidance Memo 96-001 recommends that chemical water quality-based limits not be placed on storm water outfalls because the methodology for developing limits and the proper method of sampling is still a concern and under review by EPA. Therefore, in the interim, monitoring end points (i.e., benchmark concentrations) are identified for those pollutants that should be given special emphasis during development of the Storm Water Pollution Prevention Plan (SWPPP).

As a result, the monitoring end-points shown in Table 4 below were established for Propylene Glycol, TPH, BOD₅, COD, TSS, TKN, and pH.

TABLE 4 – Storm Water Monitoring End Points	
Parameter	Monitoring End Point
Propylene Glycol	100 mg/L
TPH	15 mg/L
BOD ₅	30 mg/L
COD	120 mg/L
TSS	100 mg/L
TKN	1.5 mg/L
pH	6.0 S.U. – 9.0 S.U.

Monitoring endpoints are not enforceable storm water discharge limits. Should storm water data exceed monitoring end points, the permittee shall reexamine the effectiveness of the SWPPP and any best management practices (BMPs) in use.

f) Effluent Monitoring / Effluent Limitations – Conventional and Non-Conventional1) Outfall 020, Outfall 021, and Outfall 032

The storm water discharges from Outfall 020, Outfall 021, and Outfall 032 are associated with fuel storage areas. DEQ guidance indicates effluent limitations are required for these types of discharges. The previous permit only addressed the discharge from Outfall 020, but with this reissuance Outfall 021 and Outfall 032 are being added.

The TPH monthly average limit of 15 mg/L and daily maximum limit of 30 mg/L will be carried forward with this permit reissuance. The limit is based on the ability of simple oil-water separator technology to recover free product from water. Wastewater discharged without a visible sheen is generally expected to meet this effluent limitation.

Total Petroleum Hydrocarbons shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW-141 (1995), or by EPA SW-846 Method 8015C for diesel range organics, or by EPA SW-846 Method 8270D. If Method 8270D is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons.

No changes to pH limitations are proposed. pH limitations are set at the water quality criteria.

Please see Attachment 4 for a detailed description of monitoring and reporting requirements for each outfall.

g) Effluent Limitations – Federal Effluent Guidelines

In its 2004 Effluent Guidelines Plan, EPA decided to develop effluent guidelines for the airport deicing category. EPA plans to publish a proposed rule in November 2008 and take final action by December 2009. As of this reissuance, the industrial discharge from Washington Dulles International Airport is not covered by a Federal Effluent Guideline. The permit may be reopened, if necessary, to address compliance with EPA regulations and any applicable effluent limit guideline that may be developed and approved for the airline industry.

h) In-Stream Monitoring

The existing permit requires in-stream monitoring at Horsepen Lake (SS001). Although not required by the existing permit, the Airport has performed similar in-stream monitoring at Cub Run (SS002). With this reissuance, the Airport has requested that the Cub Run monitoring become a requirement of the permit. As such, in-stream monitoring shall now be required at Cub Run (SS002). Additionally with this reissuance, a new in-stream monitoring location has been established in the Landmark Aviation area (SS003).

Please see Attachment 4 for a detailed description of monitoring and reporting requirements for each in-stream sampling location.

i) Effluent Monitoring / Effluent Limitations Summary

Those parameters identified for effluent monitoring are presented in Attachment 4. Monitoring end-points were established for Propylene Glycol, TPH, BOD₅, COD, TSS, TKN, and pH.

Effluent limitations for Outfall 020, Outfall 021, and Outfall 032 are presented in Attachment 4. Limits were established for pH, and Total Petroleum Hydrocarbons.

Sample Type and Frequency are in accordance with the recommendations in the VPDES Permit Manual.

18. Antibacksliding:

All limits in this permit are at least as stringent as those previously established. Backsliding does not apply to this reissuance.

19. Effluent Limitations/Monitoring Requirements:

Please see Attachment 4 for a detailed description of monitoring and reporting requirements for each outfall and in-stream sampling location.

20. Runway 4 (Runway 1L-19R) Special Study:

The Authority has constructed a fourth runway (Runway 1L-19R) and associated taxiways and accompanying service roads at the Washington Dulles International Airport. This runway is expected to become operational in 2009. The storm water management system for the runway system and de-icing pad were designed to take into consideration environmental resources, storm water regulatory requirements, and long-term airport operational needs. The storm water treatment system detains storm water for treatment through passive biological systems, referred to as Biological Treatment Units (BTUs). A total of five BTUs have been constructed along the new runway with each BTU functioning independently. The storm water discharge from the BTUs ultimately combines with that from Outfalls 001, 002, and 003 prior to discharge to Horsepen Lake.

Low-Impact Development (LID) concepts were also incorporated into the fourth runway project to meet DEQ water quality requirements. The principles of LID require that runoff be minimized by promoting infiltration and treatment onsite or as near to the source as possible.

Discharge from the BTU's shall be authorized under this permit.

a. Special Study - Storm Water Discharge Screening Requirements

The BTU technology in place along Runway 4 (Runway 1L-19R) is in itself considered a best management practice (BMP) for the purpose of enhancing water quality. It is staff's best professional judgement that a special study of BTU discharge be included with this reissuance.

The Airport shall monitor the storm water runoff at both the entry point and discharge point of each BTU upon proper establishment of the system (i.e., plants are well established and the system is functioning properly). The Airport shall keep DEQ-NRO informed as to the status of the BTU system to include an estimate of when monitoring shall begin. A minimum of two deicing and/or anti-icing events where Centralized Deicing Pad B is used extensively and one non-deicing and/or anti-icing discharge event shall be monitored per year. The Airport shall monitor storm water runoff at both the entry point and discharge point of each BTU for the following parameters: Flow, pH, BOD₅, COD, TSS, TKN, TPH, Propylene Glycol (October – April) and Conductivity. Monitoring data shall be retained with the SWPPP and a summary of the data shall be submitted with the Airport's annual report.

It is staff's best professional judgement that water quality will be protected via the development of the Deicing Management and Monitoring Plan (see Part 22 of the Fact Sheet) and storm water discharge screening. Should discharge screening data indicate potential water quality criteria exceedances, the Airport shall investigate the functionality of the BTU storm water treatment system, and implement corrective action measures.

21. Ground Water Monitoring:

The following ground water discussion is provided in response to EPA Region 3 RCRA staff correspondence received in February 2008 concerning activities at Washington Dulles International Airport. EPA Region 3 RCRA staff provided four recommendations for the VPDES permit with regard to management of glycol and other contaminated discharges to protect ground water as a drinking water source. Subsequent to receiving this correspondence, EPA Region 3 RCRA staff issued a final Human Health – Environmental Indicator Report (HHEI) dated April 9, 2008. The final report did not require any further action by DEQ. Although no further action was requested within the HHEI, it is staff's opinion that the four original recommendations be addressed in the event EPA Region 3 RCRA staff requests additional information.

1) Recommendation 1 – Address Ground Water Protection in the Permit

EPA Region 3 requested revisions to language in several sections of Part 1.E (Industrial Activities Storm Water Pollution Prevention Plan Requirements) to protect ground water as a drinking water source. Their requests involved removing the term “infiltration devices”, revising the term “wet detention/retention devices”, and incorporating protection of and monitoring ground water in to several paragraphs within this section. The language that appears in this section of the existing permit is boilerplate language from the 1999 VPDES General Permit for Storm Water Discharges Associated with Industrial Activity which is based on EPA's own 1995 Multi-Sector General Permit for Storm Water Discharges Associated with Industrial Activity (MSGP).

Storm water management language within the draft permit will be updated to reflect that which is found within Sector S (Air Transportation) of the 2004 VPDES General Permit for Storm Water Discharges Associated with Industrial Activity. The 2004 VPDES permit is again based on EPA's own 2000 Multi-Sector General Permit for Storm Water Discharges Associated with Industrial Activity (MSGP).

2) Recommendation 2 – Continue to Work with the Facility to Reduce the Source, Minimize Discharges, and Maximize Glycol Recovery

Please see Section 22 of the Fact Sheet for a discussion on recent efforts by the Airport concerning glycol application and recovery.

3) Recommendation 3 – Require Dulles to Monitor the Subsurface Fate of Glycol, Breakdown Products, and Additives

DEQ staff has not received complaints and/or concerns from local water authorities, Loudoun County and/or Fairfax County residents or the Virginia Department of Health with regard to residential well contamination. Without evidence of such contamination, there is no rationale for requiring such monitoring. As such, it is staff's opinion that monitoring of the subsurface fate of glycol, its breakdown products or additives not be required with this reissuance.

Additionally, recent research indicates that Ethylene Glycol and Propylene Glycol were found to be readily biodegradable under both aerobic and anaerobic conditions without formation of toxic or persistent intermediates (Klotzbücher et al., 2006). This research further states that long-term groundwater contamination by the glycols is not expected (Klotzbücher et al., 2006).

4) Recommendation 4 – Include Monitoring for PCBs

EPA Region 3 requested that PCB monitoring be included with this reissuance as “a contractor who expressed a desire to remain anonymous expressed that large cleanups of PCBs have taken place at the facility”. DEQ respectfully requests that additional documentation (i.e., manifests, laboratory results, etc.) be submitted to the DEQ-Northern Regional Office (DEQ-NRO) to substantiate this claim. Until such documentation is received and reviewed by regional office staff, PCB monitoring will not be included with this reissuance.

Additionally, the Airport is required by Part II.F (Unauthorized Discharges), Part II.G (Reports of Unauthorized Discharges) and Part II.I (Reports of Non-Compliance) to report to DEQ-NRO any unauthorized discharges that may

adversely affect State waters or may endanger public health. No PCB related notifications have been received by DEQ-NRO from the Airport.

22. Additional Glycol Discussion :

Various airport associations estimate that about 75% of glycol applied to aircraft can be recovered, with approximately 25% remaining on aircraft and shearing off during takeoff. According to these same associations, without total retention of glycol runoff, only about 50% can be collected by GRVs.

Since the previous reissuance, glycol application and recovery activities at the Airport have been modified. Of most significance is the identification and elimination of centralized aircraft deicing operations from areas that do not have the ability to close off drains. In addition, a water quality testing program which measures glycol concentrations during storm events has been reinstituted by the Airport. This program includes twice daily testing prior, during and up to 72 hours after storm events with daily reporting to the Fairfax County Water Authority. With this reissuance, reporting to DEQ-NRO shall also be required.

For the 2008 - 2009 deicing season, all aircraft will be deiced at their respective gates or remotely on the 12/30 run-up pad. This deicing pad was designed and constructed with provisions such as valves, trench drains, and collection manholes incorporated to aid in the collection of spent deicing fluids and further reduce glycol discharges from the Airport.

Consideration is being given to centralized deicing operations where continuous trench drains are available for the recovery of aircraft deicing fluids. The Glycol Recovery Contractor has been requested to provide additional equipment operators during the smaller storm events and additional recovery storage tanks will be positioned to allow for more efficient off-loading. The largest airline at the Airport will be using an anti-ice application to reduce the quantity of fluid necessary to deice. Management of snow that contains glycol will also be trucked to a snow disposal area where it can be melted and recovered.

Deicing Pad B is part of the fourth runway construction (as described in Section 20 of the Fact Sheet) and is approximately 21 acres in size and was built to accommodate nine aircraft positions. The drainage components include center drains in each deicing pad to minimize the pavement travel distance for spent deicing fluid. Other drainage features include grooved pavement to direct surface drainage and reduce the effect of jet blast, and underdrains that recover spent fluid that passes into the pavement base material. Collected surface runoff can either go to the storm water system (summer non-deicing events) or the aircraft deicing fluid collection system (winter deicing events). The deicing fluid collection system consists of holding runoff in an underground storage tank and pumping either to the sanitary sewer system (non-recyclable low concentrate fluids) or to a truck-loading facility (high concentrate fluids). At this time, the system is not automated and will take additional funding sources to complete the project. The future use of Deicing Pad B and the present snow removal plan are both under evaluation by Authority management and no date has been assigned for its use at the time of this reissuance.

Due to the significance of Propylene Glycol use and its potential impact on nearby drinking water sources relative to taste and odor concerns, the permittees shall be required to develop and implement a Deicing Management and Monitoring Plan to meet a Propylene Glycol performance target level of 100 mg/L at SS001 (Horsepen Lake). The plan shall be submitted to the DEQ-NRO for review and approval no later than January 20, 2010 except as specified later within this section. Once approved, the Deicing Management and Monitoring Plan shall be incorporated into the Airport's SWPPP and become an enforceable part of the permit. Future changes to the Deicing Management and Monitoring Plan shall be addressed by the submittal of a revised plan to DEQ-NRO within 90 days of the changes.

The purpose of the Deicing Management and Monitoring Plan is to assess and improve Best Management Practices (BMPs) for deicing and/or anti-icing practices to ensure the protection of water quality and drinking water sources. The plan shall include, at a minimum, the following:

- A description of BMPs considered and the rationale for their selection or non-selection;
- A description of the projected performance of chosen BMPs;
- The plan shall describe and ensure implementation of practices that are to be used to reduce potential pollutants in discharges from the BMPs to ensure compliance with the terms and conditions of this permit;

- A standard operating procedure for conducting monthly inspections, at a minimum, of deicing and/or anti-icing activities throughout the Airport during deicing season (October – April). If deicing occurs before or after this period, the inspections shall be expanded to include all months during which deicing chemicals may be used. The procedure shall also incorporate the maintenance of a log documenting the results of each inspection and corrective actions to ensure compliance with the Deicing Management and Monitoring Plan;
- Tracking and follow-up procedures to ensure that appropriate actions are taken in response to monthly deicing inspections;
- A description and schedule of preventive maintenance activities for all BMPs; and
- The monitoring plan shall include the sampling locations, parameters, collection procedures, methods of analysis, and frequencies of monitoring for deicing and/or anti-icing usage, BMP performance/effectiveness, and any required monitoring for special studies. The monitoring portion of the Deicing Management and Monitoring Plan shall be submitted to the DEQ-NRO for review and approval no later than September 30, 2009.

The Airport shall notify DEQ-NRO no later than 24 hours after becoming aware of a failure to comply with any Best Management Practice in the Deicing Management and Monitoring Plan. Within five days of becoming aware of such a failure, the Airport shall submit a written description of the operational and environmental conditions associated with the failure to comply with the best management practice; the magnitude and duration of the failure; if the failure has not been corrected, the anticipated time expected until correction; the steps taken or planned to correct the failure; the likelihood of reoccurrence of the failure, measures taken to mitigate environmental damage, and steps taken to prevent environmental damage should the situation reoccur.

The following Deicing Fluid Discharge management requirements shall also be implemented with this reissuance:

- To the maximum extent practicable, the permittees shall use centralized deicing locations in conjunction with the use of controllable storm drainage systems, the use of Glycol Recovery Vehicles, and isolate Propylene Glycol contaminated snow from Airport approved deicing locations.
- The permittees shall conduct an annual review of new aircraft and pavement deicing and anti-icing product developments and shall evaluate their potential applicability for use at Washington Dulles International Airport. The evaluation shall consider potential environmental benefits, operational safety, operational feasibility, and economic feasibility. The results of each annual review, including all conclusions and supporting rationale, shall be submitted with the Annual Report.
- The Airport shall install on-line technology that will allow for continuous readings of Total Organic Carbon (TOC) at frequency of at least once per hour. TOC monitoring shall be initiated no later than the 2010 – 2011 deicing season.
- TOC data obtained from online instrumentation shall be made available to the Fairfax County Water Authority in such a manner that allows the Water Authority to make operational decisions prior to any potential Propylene Glycol impact at the Potomac River intake.
- In the event of TOC instrumentation malfunction (i.e., mechanical, power failure, vandalism, etc.), the Airport shall resume manual sampling of Propylene Glycol at SS001 in accordance with Part I.A. of the permit. The Airport shall notify the Fairfax County Water Authority and DEQ within 24 hours of implementing this procedure change.
- The permittees shall evaluate the potential correlation of TOC as a measure of Propylene Glycol concentrations in storm water runoff at SS001 (Horsepen Lake). Interim results of the TOC correlation evaluation, including all conclusions and supporting rationale, shall be submitted with the Annual Report. A final determination on the correlation of TOC as a measure of Propylene Glycol shall be submitted with the next application for reissuance, which is due at least 180 days prior to the expiration date of this permit.
- Upon installation of TOC instrumentation and initial demonstration of capability (i.e., via manufacturer's installation process), Propylene Glycol monitoring frequency shall be reduced or suspended as in accordance with Part I.A of this permit.
- At the close of each deicing season (October – April), the Airport shall complete a review of all Propylene Glycol monitoring data from SS001 (Horsepen Lake) to determine the percentage of data that is greater than the performance target value of 100 mg/L. The review shall also include the number of discharge events during the deicing season as well as any supporting information relative to the meteorological conditions associated with each discharge event. The results of the monitoring data review and supporting weather

information shall serve as a basis for documenting the relationship between the amount of deicing/anti-icing fluids used and the conditions under which they were applied. The results of the monitoring data review and any supporting information shall be submitted with the Annual Report.

- The Airport shall notify the Fairfax County Water Authority and DEQ-NRO of any deicing/anti-icing events in which deicing/anti-icing fluids enter the storm water drainage system to either Stallion Branch or Horsepen Run. Such notification shall be made within 8 hours after the commencement of that deicing/anti-icing event.
- The Airport shall notify the Fairfax County Water Authority and DEQ-NRO of any deicing/anti-icing fluid concentrations at SS001 (Horsepen Lake) are greater than the performance target concentration of 100 mg/L. Notification shall be made as soon as practicable but no later than 8 hours after monitoring results are obtained.

23. Other Permit Requirements :

- a) Part I.B. of the permit contains additional monitoring requirements, quantification levels and compliance reporting instructions.

9 VAC 25-31-190.L.4.c. requires an arithmetic mean for measurement averaging and 9 VAC 25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Specific analytical methodologies for toxics are listed in this permit section as well as quantification levels (QLs) necessary to demonstrate compliance with applicable permit limitations or for use in future evaluations to determine if the pollutant has reasonable potential to cause or contribute to a violation. Required averaging methodologies are also specified.

- b) Permit Section Part I.C details the requirements of Deicing Fluid Management

Due to the significance of Propylene Glycol use and its potential impact on nearby drinking water sources, the Airport shall be required to develop and implement a Deicing Management and Monitoring Plan with this reissuance. The plan shall be submitted to the DEQ-NRO for review and approval no later than January 20, 2010. Once approved, the Deicing Management and Monitoring Plan shall be incorporated into the SWPPP. The purpose of the plan is to assess and improve Best Management Practices (BMPs) for deicing and/or anti-icing practices to ensure the protection of water quality.

- c) Permit Section Part I.D details the requirements of the Runway 4 Discharge Special Study.

The Airport shall monitor the storm water runoff at both the entry point and discharge point of each BTU upon proper establishment of the system (i.e., plants are well established and the system is functioning properly). The Airport shall keep DEQ-NRO informed as to the status of the BTU system to include an estimate of when monitoring shall begin. A minimum of two deicing and/or anti-icing events where Centralized Deicing Pad B is used extensively and one non-deicing and/or anti-icing discharge event shall be monitored per year. The Airport shall monitor storm water runoff at both the entry point and discharge point of each BTU for the following parameters: Flow, pH, BOD₅, COD, TSS, TKN, TPH, Propylene Glycol (October – April) and Conductivity. Monitoring data shall be retained with the SWPPP and a summary of the data shall be submitted with the Airport's Annual Report.

- d) Permit Section Part I.E details the requirements of the Annual Report.

The Airport shall prepare an annual report for the period of May 1 – April 30 of the preceding year. The report shall be submitted to the Department of Environmental Quality, Northern Regional Office (DEQ-NRO) no later than June 30 of each year.

- e) Permit Section Part I.F. details the requirements of a Storm Water Management Plan.

9 VAC 25-31-10 defines discharges of storm water from municipal treatment plants with design flow of 1.0 MGD or more, or plants with approved pretreatment programs, as discharges of storm water associated with

industrial activity. 9 VAC 25-31-120 requires a permit for these discharges. The pollution Prevention Plan requirements are derived from the VPDES general permit for discharges of storm water associated with industrial activity, 9 VAC 25-151-10 et seq.

24. Other Special Conditions :

- a) O&M Manual Requirement. Required by Code of Virginia §62.1-44.19; VPDES Permit Regulation, 9 VAC 25-31-190.E. The permittee shall review the existing Operations and Maintenance (O&M) Manual and notify the DEQ Northern Regional Office, in writing, whether it is still accurate and complete by October 22, 2009. If the O&M Manual is no longer accurate and complete, a revised O&M Manual shall be submitted for approval to the DEQ Northern Regional Office by October 27, 2009. Future changes to the facility must be addressed by the submittal of a revised O&M Manual within 90 days of the changes. Non-compliance with the O&M Manual shall be deemed a violation of the permit.
- b) Water Quality Criteria Reopener. The VPDES Permit Regulation at 9 VAC 25-31-220 D. requires establishment of effluent limitations to ensure attainment/maintenance of receiving stream water quality criteria. Should effluent monitoring indicate the need for any water quality-based limitations, this permit may be modified or alternatively revoked and reissued to incorporate appropriate limitations.
- c) Materials Handling/Storage. 9 VAC 25-31-50 A prohibits the discharge of any wastes into State waters unless authorized by permit. Code of Virginia §62.1-44.16 and §62.1-44.17 authorize the Board to regulate the discharge of industrial waste or other waste.
- d) Notification Levels. The permittee shall notify the Department as soon as they know or have reason to believe:
 - a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following notification levels:
 - (1) One hundred micrograms per liter;
 - (2) Two hundred micrograms per liter for acrolein and acrylonitrile; five hundred micrograms per liter for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter for antimony;
 - (3) Five times the maximum concentration value reported for that pollutant in the permit application; or
 - (4) The level established by the Board.
 - b. That any activity has occurred or will occur which would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following notification levels:
 - (1) Five hundred micrograms per liter;
 - (2) One milligram per liter for antimony;
 - (3) Ten times the maximum concentration value reported for that pollutant in the permit application; or
 - (4) The level established by the Board.
- e) Spill Reporting. The permittee and co-permittees are required to report spills equal to or exceeding the reportable quantity levels, in accordance with the requirements of 40 CFR 110, 117, and 302. The assessed amount must be the summation of spills by each co-permittee. The permittee shall submit a written record of all spills in the annual report. This record shall include: a description of the release, the circumstances leading to the release, and the date of the release. In addition, the permittee shall identify measures to prevent the reoccurrence of such releases and to respond to such releases.

- g) Legal Authority of Permittee. The permittee shall operate pursuant to legal authority established by statute, ordinance or series of contracts which authorizes, or enables the permittee to carry out all parts of the Storm Water Pollution Prevention Plan identified in Part I.F of the permit. If the existing legal authority is not sufficient to carry out all parts of the Storm Water Pollution Prevention Plan, the permittee shall seek additional authority as necessary/ appropriate, and shall include a schedule not to exceed one year and description of the proposed additional authority in each Annual Report as required by Part I.E of the permit.
- h) Storm Water Pollution Plan Implementation Requirements. The permittee shall implement Storm Water Pollution Prevention Plan requirements as found within Part I.F of the permit. Where Plans operated by co-permittees are included in the permittee's Storm Water Pollution Prevention Plan, the permittee shall, to the maximum extent practicable, ensure that such Plans remain operational for the term of the permit. However, the permittee shall not be responsible for operating or financing the Plan operated by co-permittees if the current operators cease the activity.
- i) In-stream Monitoring. The permittee shall monitor in-stream sampling locations SS001 (Horsepen Lake), SS002 (Cub Run), and SS003 (Landmark Aviation) in accordance with Part I.A of the permit. During the deicing/anti-icing season (October – April), in-stream samples shall be collected as soon as practicable, but not to exceed 12 hours after the commencement of deicing and/or anti-icing activities. The following parameters shall be sampled: Flow, pH, Dissolved Oxygen, TPH, TSS, BOD₅, COD, TKN, Propylene Glycol and Conductivity. Data shall be reported by the submission of DMRs in accordance with Part I.A of the permit.
- j) Ethylene Glycol Prohibition. The use of Ethylene Glycol by the permittee and all co-permittees is prohibited by this permit.
- k) Oil Storage Ground Water Monitoring Reopener. Facilities with greater than 1,000,000 gallons of regulated aboveground petroleum storage are required to monitor ground water under the Facility and Aboveground Storage Tank Regulation. Where potential exists for ground water pollution and that regulation does not require monitoring, the VPDES permit may under Code of Virginia § 62.1-44.21. As this facility currently manages ground water, in accordance with 9 VAC 25-90-10 et seq., Oil Discharge Contingency Plans and Administration Fees for Approval, this permit does not presently impose ground water monitoring requirements.
- l) No Discharge of Detergents, Surfactants, or Solvents to the Oil/Water Separators. This special condition is necessary to ensure that the oil/water separators' performance is not impacted by compounds designed to emulsify oil. Detergents, surfactants, and some other solvents will prohibit oil recovery by physical means.
- m) Effluent Limitation Guideline (ELG) Reopener. This special condition is to allow the permit to reopened if necessary to address compliance with EPA regulations and any applicable ELG that may be developed and approved for the airline industry.

Permit Section Part II. Part II of the permit contains standard conditions that appear in all VPDES Permits. In general, these standard conditions address the responsibilities of the permittee, reporting requirements, testing procedures and records retention.

25. Changes to the Permit from the Previously Issued Permit:**a) Special Conditions:**

- The Materials Handling/Storage special condition was updated to reflect current DEQ language.
- The Water Quality Criteria special condition was added.
- The Deicing Notification special condition was moved to Part I.C (Deicing Fluid Management) of the permit.
- A Deicing Notification pertaining to Propylene Glycol concentrations was added with this reissuance.
- The In-Stream Monitoring special condition wording was modified to include a new in-stream monitoring location (SS003), submission of monitoring results via DMR, and a reduction in time in which to collect samples from 24 hours to 12 hours.
- The Monitoring Reduction special condition was removed as this language is now found within the storm water management language.
- The Storm Water Discharge special condition was removed.
- The Oil Storage Ground Water Monitoring reopener was added.
- The No Discharge of Detergents, Surfactants, or Solvents to the Oil/Water Separators special condition was added with this reissuance.
- A TMDL special condition was added with this reissuance.
- An ELG special condition was added with this reissuance.
- A Deicing Management and Monitoring Plan requirement was added with this reissuance.
- Deicing Fluid Management requirements were added with this reissuance.
- A Runway 4 Discharge Special Study was added with this reissuance.

b) Monitoring and Effluent Limitations:

- Monthly minimum and monthly maximum reporting for Propylene Glycol has been added with this reissuance.
- The Airport shall install on-line technology that will allow for continuous readings of Total Organic Carbon (TOC) at frequency of at least once per hour.
- Reporting of the weekly average for Propylene Glycol has been removed with this reissuance.
- Monitoring for TKN was added to be consistent with the 2004 SWGP.
- Reporting of DO on the DMRs was added with this reissuance.
- Two new outfalls (031, 032) were added with this reissuance.
- A new in-stream sampling location (SS003) was added with this reissuance.
- Reporting of in-stream sampling results shall be submitted on a DMR beginning with this reissuance.
- Effluent limitations were added to Outfall 021 and Outfall 032.
- Monitoring and reporting for conductivity was removed from all non-deicing and/or anti-icing outfalls.
- Monitoring and reporting for COD was removed from all non-deicing and/or anti-icing outfalls.
- In-stream monitoring for ammonia was removed and monitoring for TKN was added to be consistent with the 2004 SWGP.
- Storm water construction language was removed from the permit as this program is no longer administered by DEQ.
- MS4 language was removed from the permit as this program is no longer administered by DEQ.
- TPH methodology was added for all outfalls requiring TPH monitoring.
- With this reissuance, all DMRs shall be submitted no later than the 10th day of the month following the defined monitoring period.
- The 2004 SWGP sector specific requirements for Sector S – Air Transportation were added to the storm water management section of the permit.
- The monitoring frequencies for Outfall 004, Outfall 006, Outfall 009, Outfall 010, Outfall 011, Outfall 014, Outfall 022, Outfall 023, and Outfall 024 have been modified from semi-annual to quarterly due to the implementation of representative sampling.
- The monitoring frequencies for Outfall 007 and Outfall 015 have been modified from monthly to

quarterly due to the implementation of representative sampling.

- The monitoring frequency for Outfall 017 has been modified from semi-annual to annual based on the level of activity and compliance history of the Airport.
- The monitoring frequency for Outfall 018 has been modified from semi-annual to annual based on the compliance history of the Airport and to be consistent with the VPDES General Permit for Car Wash Activities.
- The monitoring frequencies for Outfall 020, Outfall 021, and Outfall 030 have been modified from semi-annual to monthly per the request of the Airport.
- The monitoring frequencies for Outfall 027, Outfall 028, and Outfall 029 have been modified from semi-annual to quarterly to ensure compliance with the Bull Run TSS TMDL.

c) Other:

- The latitude and longitude for Outfall 001 is different from that which appears in the application as the physical location of the outfall has moved due to construction activities.
- The latitude and longitude for Outfall 007 is different from that which appears in the application as the physical location of the outfall has moved due to construction activities.
- The latitude and longitude for Outfall 010 is different from that which appears in the application as the minutes were incorrect.
- The latitude and longitude for Outfall 020 is different from that which appears in the application as the physical location of the outfall has moved due to construction activities.
- The latitude and longitude for Outfall 025 is different from that which appears in the application as the physical location of the outfall has moved slightly to allow for easier access.
- The latitude and longitude for Outfall 027 is different from that which appears in the application as the physical location of the outfall has moved slightly to allow for easier access.
- The designation of Runway 19C is different from that which appears in the application as the designation has changed to Runway 1L.
- The designation of Cargo Building 5 is different from that which appears in the application as the designation has changed to Cargo Building 6.

26. Variances/Alternate Limits or Conditions:

N/A

27. Public Notice Information:

First Public Notice Date: June 17, 2009

Second Public Notice Date: June 24, 2009

Public Notice Information is required by 9 VAC 25-31-280 B. All pertinent information is on file and may be inspected, and copied by contacting the: DEQ Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193, Telephone No. (703) 583-3853, susan.mackert@deq.virginia.gov. See Attachment 6 for a copy of the public notice document.

Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing if public response is significant. Requests for public hearings shall state the reason why a hearing is requested, the nature of the issues proposed to be raised in the public hearing and a brief explanation of how the requester's interests would be directly and adversely affected by the proposed permit action. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given.

28. 303 (d) Listed Stream Segments and Total Max. Daily Loads (TMDL):

The following receiving streams are not listed on the current 303(d) list: Dead Run, Horespen Run, UT to Horsepen Run, Stallion Branch, and UT to Stallion Branch. The following receiving stream is listed on the current 303(d) list: Cub Run.

A Benthic Total Maximum Daily Load (TMDL) was approved by the U.S. EPA on September 26, 2006 for Bull Run. Although storm water runoff from the Airport does not discharge directly to Bull Run, the TMDL took in to account all upstream point source discharges. The area associated with the WLA for the Airport took into account only that portion of the Airport property that drains into the Cub Run and Dead Run watersheds. Thus, the WLA only applies to the eleven outfalls that discharge to the Cub Run/Dead Run drainage areas. The Airport was given a Benthic TMDL WLA of 275.1 tons/year of TSS.

Monitoring for TSS shall be carried forward with this reissuance. Additionally, with this reissuance a quarter of the TSS samples shall now be collected during a storm event in order to characterize the discharge.

An annual estimate of TSS load (tons/year) at SS002 (Cub Run) shall be provided within the Annual Report.

TMDL Reopener: This special condition is to allow the permit to reopened if necessary to bring it in compliance with any applicable TMDL that may be developed and approved for the receiving stream.

27. Additional Comments:

Previous Board Action(s): None.

Staff Comments:

Public Comment: Comments were received from United Airlines and were addressed accordingly.

EPA Checklist: The checklist can be found in Attachment 7.



Outfall: 001

Airport Area: Concourses C and D, Runway 1C, taxiways and taxi lanes, ground service equipment area

Treatment: None

Industrial Activities of Concern: Aircraft deicing, deicing runways, de-rubberizing runways, material loading/unloading, fueling (aircraft and vehicle), and ASTs (glycol)

Latitude: 38° 56' 42.9"

Longitude: 77° 27' 40.3"

Receiving Stream: Stallion Branch

Monitoring Frequency: Monthly



Outfall: 002

Airport Area: Concourses C and D, Runway 1C, taxiways and taxi lanes, fuel and glycol ASTs

Treatment: None

Industrial Activities of Concern: Aircraft deicing, deicing runways, de-rubberizing runways, material loading/unloading, and fueling (aircraft and vehicle)

Latitude: 38° 56' 49.2"

Longitude: 77° 27' 38.6"

Receiving Stream: Unnamed Tributary to Stallion Branch

Monitoring Frequency: Monthly



Outfall: 003

Airport Area: Concourses A and B, Runway 1C, maintenance shops and warehouse, taxi lanes and taxiways

Treatment: None

Industrial Activities of Concern: Aircraft deicing, deicing runways, de-rubberizing runways, material loading/unloading, and fueling (aircraft and vehicle), and ASTs (glycol)

Latitude: 38° 56' 49.9"

Longitude: 77° 27' 38.5"

Receiving Stream: Unnamed Tributary to Stallion Branch

Monitoring Frequency: Monthly



Outfall: 004

Airport Area: Runway 1C and taxiways

Treatment: None

Industrial Activities of Concern: Deicing runways and de-rubberizing runways

Latitude: 38° 57' 17.6"

Longitude: 77° 27' 37.8"

Receiving Stream: Unnamed Tributary to Stallion Branch

Monitoring Frequency: Quarterly



Outfall: 005

Airport Area: Runway 1C, taxiways and cargo buildings 1 and 2

Treatment: None

Industrial Activities of Concern: Aircraft deicing, deicing runways, de-rubberizing runways, material loading/unloading, fueling (aircraft and vehicle) and ASTs (glycol)

Latitude: 38° 57' 32.9"

Longitude: 77° 27' 37.7"

Receiving Stream: Unnamed Tributary to Stallion Branch

Monitoring Frequency: Quarterly



Outfall: 006

Airport Area: Runway 19C, taxiways and 19C run-up block

Treatment: None

Industrial Activities of Concern: Deicing runways and de-rubberizing runways

Latitude: 38° 58' 13.4"

Longitude: 77° 27' 45.1"

Receiving Stream: Unnamed Tributary to Stallion Branch

Monitoring Frequency: Quarterly



Outfall: 007

Airport Area: Landmark Aviation

Treatment: Oil-water separator

Industrial Activities of Concern: Aircraft deicing, material loading/unloading, maintenance (aircraft, vehicle and equipment), fueling (aircraft and vehicle), and ASTs (jet fuel and glycol)

Latitude: 38° 58' 10.4"

Longitude: 77° 27' 18.1"

Receiving Stream: Unnamed Tributary to Horsepen Run

Monitoring Frequency: Quarterly



Outfall: 008

Airport Area: Landmark Aviation

Treatment: None

Industrial Activities of Concern: Aircraft deicing, material loading/unloading, maintenance (aircraft, vehicle and equipment), and fueling (aircraft and vehicle)

Latitude: 38° 57' 08.5"

Longitude: 77° 27' 17.6"

Receiving Stream: Unnamed Tributary to Horsepen Run

Monitoring Frequency: Quarterly



Outfall: 009

Airport Area: Cargo Building 6

Treatment: Oil-water separator

Industrial Activities of Concern: Aircraft deicing, material loading/unloading, maintenance (vehicle and equipment), and fueling (aircraft and vehicle)

Latitude: 38° 57' 48.2"

Longitude: 77° 27' 18.5"

Receiving Stream: Unnamed Tributary to Horsepen Run

Monitoring Frequency: Quarterly



Outfall: 010

Airport Area: Cargo Building 6

Treatment: Oil-water separator

Industrial Activities of Concern: Aircraft deicing, material loading/unloading, maintenance (vehicle and equipment), and fueling (aircraft and vehicle)

Latitude: 38° 57' 45.8"

Longitude: 77° 27' 18.8"

Receiving Stream: Unnamed Tributary to Horsepen Run

Monitoring Frequency: Quarterly



Outfall: 011

Airport Area: Cargo Building 6

Treatment: Oil-water separator

Industrial Activities of Concern: Aircraft deicing, material loading/unloading, maintenance (vehicle and equipment), and fueling (aircraft and vehicle)

Latitude: 38° 57' 40.1"

Longitude: 77° 27' 18.7"

Receiving Stream: Unnamed Tributary to Horsepen Run

Monitoring Frequency: Quarterly



Outfall: 012

Airport Area: Cargo Building 5 (FedEx Ramp)

Treatment: Oil-water separator





Industrial Activities of Concern: Aircraft deicing, material loading/unloading, maintenance (vehicle and equipment), and fueling (aircraft and vehicle)

Latitude: 38° 57' 34.6"

Longitude: 77° 27' 18.7"





Receiving Stream: Unnamed Tributary to Horsepen Run

Monitoring Frequency: Quarterly

	<p>Outfall: 013</p> <p>Airport Area: Cargo Building 5 (FedEx Ramp)</p> <p>Treatment: None</p> <p>Industrial Activities of Concern: Aircraft deicing, material loading/unloading, maintenance (vehicle and equipment), and fueling (aircraft and vehicle)</p> <p>Latitude: 38° 57' 31.1"</p> <p>Longitude: 77° 27' 18.7"</p> <p>Receiving Stream: Unnamed Tributary to Horsepen Run</p> <p>Monitoring Frequency: Quarterly</p>
	<p>Outfall: 014</p> <p>Airport Area: Cargo Building 4</p> <p>Treatment: Oil-water separator</p> <p>Industrial Activities of Concern: Aircraft deicing, material loading/unloading, maintenance (vehicle and equipment), and fueling (aircraft and vehicle)</p> <p>Latitude: 38° 57' 30.6"</p> <p>Longitude: 77° 27' 18.6"</p> <p>Receiving Stream: Unnamed Tributary to Horsepen Run</p> <p>Monitoring Frequency: Quarterly</p>
	<p>Outfall: 015</p> <p>Airport Area: Cargo buildings 3 and 4, taxiways, and landside cargo parking areas</p> <p>Treatment: None</p> <p>Industrial Activities of Concern: Aircraft deicing, material loading/unloading, maintenance (vehicle and equipment), and fueling (aircraft and vehicle)</p> <p>Latitude: 38° 57' 29.9"</p> <p>Longitude: 77° 27' 18.4"</p> <p>Receiving Stream: Unnamed Tributary to Horsepen Run</p> <p>Monitoring Frequency: Quarterly</p>
	<p>Outfall: 016</p> <p>Airport Area: Cargo Buildings 3 and 4, and taxiways</p> <p>Treatment: Oil-water separator</p> <p>Industrial Activities of Concern: Deicing and de-rubberizing runways</p> <p>Latitude: 38° 57' 29.2"</p> <p>Longitude: 77° 27' 19.0"</p> <p>Receiving Stream: Unnamed Tributary to Horsepen Run</p> <p>Monitoring Frequency: Quarterly</p>

	<p>Outfall: 017</p> <p>Airport Area: Aircraft Maintenance Hangar</p> <p>Treatment: Oil-water separator</p> <p>Industrial Activities of Concern: Material loading/unloading, and maintenance (aircraft, vehicle and equipment)</p> <p>Latitude: 38° 58' 14.7"</p> <p>Longitude: 77° 27' 07.6"</p> <p>Receiving Stream: Unnamed Tributary to Horsepen Run</p> <p>Monitoring Frequency: Annual</p>
	<p>Outfall: 018</p> <p>Airport Area: Car rental facilities and bus maintenance facility</p> <p>Treatment: None</p> <p>Industrial Activities of Concern: Material loading/unloading, and maintenance (vehicle and equipment), and fueling (vehicle)</p> <p>Latitude: 38° 58' 19.0"</p> <p>Longitude: 77° 26' 48.8"</p> <p>Receiving Stream: Unnamed Tributary to Horsepen Run</p> <p>Monitoring Frequency: Annual</p>
	<p>Outfall: 019</p> <p>Airport Area: Runway 1R and taxiways</p> <p>Treatment: None</p> <p>Industrial Activities of Concern: Deicing and de-rubberizing runways</p> <p>Latitude: 38° 56' 55.2"</p> <p>Longitude: 77° 26' 05.5"</p> <p>Receiving Stream: Unnamed Tributary to Horsepen Run</p> <p>Monitoring Frequency: Quarterly</p>
	<p>Outfall: 020</p> <p>Airport Area: Fuel Farm</p> <p>Treatment: Oil-water separator, Detention pond, and sluice gates</p> <p>Industrial Activities of Concern: Fuel storage and transfer</p> <p>Latitude: 38° 56' 46.2"</p> <p>Longitude: 77° 25' 48.4"</p> <p>Receiving Stream: Unnamed Tributary to Horsepen Run</p> <p>Monitoring Frequency: Monthly</p>

	<p>Outfall: 021</p> <p>Airport Area: Settling Tank Fuel Farm</p> <p>Treatment: Oil-water separator</p> <p>Industrial Activities of Concern: Fuel storage and transfer</p> <p>Latitude: 38° 56' 22.8"</p> <p>Longitude: 77° 25' 50.5"</p> <p>Receiving Stream: Unnamed Tributary to Horsepen Run</p> <p>Monitoring Frequency: Monthly</p>
	<p>Outfall: 022</p> <p>Airport Area: Runway 1R and taxiways</p> <p>Treatment: None</p> <p>Industrial Activities of Concern: Deicing and de-rubberizing runways</p> <p>Latitude: 38° 56' 15.3"</p> <p>Longitude: 77° 26' 26.5"</p> <p>Receiving Stream: Unnamed tributary to Cub Run</p> <p>Monitoring Frequency: Quarterly</p>
	<p>Outfall: 023</p> <p>Airport Area: Runway 1R and taxiways</p> <p>Treatment: None</p> <p>Industrial Activities of Concern: Deicing and de-rubberizing runways</p> <p>Latitude: 38° 55' 59.7"</p> <p>Longitude: 77° 26' 26.6"</p> <p>Receiving Stream: Unnamed tributary to Cub Run</p> <p>Monitoring Frequency: Quarterly</p>
	<p>Outfall: 024</p> <p>Airport Area: Runway 1R and taxiways</p> <p>Treatment: None</p> <p>Industrial Activities of Concern: Deicing and de-rubberizing runways</p> <p>Latitude: 38° 55' 50.7"</p> <p>Longitude: 77° 26' 26.5"</p> <p>Receiving Stream: Unnamed tributary to Cub Run</p> <p>Monitoring Frequency: Quarterly</p>

	<p>Outfall: 025</p> <p>Airport Area: Runway 1R and taxiways</p> <p>Treatment: None</p> <p>Industrial Activities of Concern: Deicing and de-rubberizing runways</p> <p>Latitude: 38° 55' 22.4"</p> <p>Longitude: 77° 26' 26.9"</p> <p>Receiving Stream: Dead Run</p> <p>Monitoring Frequency: Quarterly</p>
	<p>Outfall: 026</p> <p>Airport Area: Runways 1L and 12L, taxi lanes</p> <p>Treatment: None</p> <p>Industrial Activities of Concern: Deicing and de-rubberizing runways</p> <p>Latitude: 38° 57' 05.2"</p> <p>Longitude: 77° 27' 17.7"</p> <p>Receiving Stream: Unnamed Tributary to Cub Run</p> <p>Monitoring Frequency: Quarterly</p>
	<p>Outfall: 027</p> <p>Airport Area: Runway 12L and taxiways</p> <p>Treatment: None</p> <p>Industrial Activities of Concern: Deicing and de-rubberizing runways</p> <p>Latitude: 38° 55' 52.1"</p> <p>Longitude: 77° 27' 40.3"</p> <p>Receiving Stream: Unnamed Tributary to Cub Run</p> <p>Monitoring Frequency: Quarterly</p>
	<p>Outfall: 028</p> <p>Airport Area: Runway 12L and taxiways</p> <p>Treatment: None</p> <p>Industrial Activities of Concern: Deicing and de-rubberizing runways</p> <p>Latitude: 38° 56' 18.8"</p> <p>Longitude: 77° 28' 32.7"</p> <p>Receiving Stream: Unnamed Tributary to Cub Run</p> <p>Monitoring Frequency: Quarterly</p>



Outfall: 029

Airport Area: Runway 12L and taxiways

Treatment: None

Industrial Activities of Concern: Deicing and de-rubberizing runways

Latitude: 38° 56' 23.2"

Longitude: 77° 28' 46.7"

Receiving Stream: Unnamed Tributary to Cub Run

Monitoring Frequency: Quarterly



Outfall: 030

Airport Area: Shop 2 Area

Treatment: None

Industrial Activities of Concern: Material storage, material loading/unloading, maintenance (vehicle and equipment), fueling (vehicle), and ASTs (potassium acetate and fuel)

Latitude: 38° 55' 42.9"

Longitude: 77° 27' 04.9"

Receiving Stream: Unnamed Tributary to Cub Run

Monitoring Frequency: Monthly



Outfall: 031

Airport Area: Taxiway F

Treatment: None

Industrial Activities of Concern: Aircraft deicing, deicing and de-rubberizing runways

Latitude: 38° 56' 0.98"

Longitude: 77° 27' 17.3"

Receiving Stream: Unnamed Tributary to Cub Run

Monitoring Frequency: Monthly



Outfall: 032

Airport Area: South Midfield Fueling Station

Treatment: Oil-water separator

Industrial Activities of Concern: Fuel storage and transfer (diesel, gasoline, Jet A)

Latitude: 38° 56' 18.8"

Longitude: 77° 28' 32.7"

Receiving Stream: Unnamed Tributary to Cub Run

Monitoring Frequency: Monthly



Stream Sample Area: SS001

Airport Area: Horsepen Lake Discharge

Treatment: None

Latitude: 38° 59' 21.6"

Longitude: 77° 27' 53.7"

Receiving Stream: Unnamed Tributary to Broad Run

Monitoring Frequency: Monthly



Stream Sample Area: SS002

Airport Area: Cub Run

Treatment: None

Latitude: 38° 55' 05.8"

Longitude: 77° 27' 52.1"

Receiving Stream: Cub Run

Monitoring Frequency: Monthly



Stream Sample Area: SS003

Airport Area: Landmark Aviation and Cargo Ramps

Treatment: None

Latitude: 38° 58' 15.1"

Longitude: 77° 27' 18.2"

Receiving Stream: Unnamed Tributary to Horsepen Run

Monitoring Frequency: Monthly

NPDES PERMIT RATING WORK SHEET

VPDES NO. : VA0089541

- ☒ Regular Addition
☐ Discretionary Addition
☐ Score change, but no status Change
☐ Deletion

Facility Name: Washington Dulles International Airport

City / County: Fairfax County / Loudoun County

Receiving Water: Cub Run, UT to Cub Run, Dead Run, Horsepen Run, UT to Horsepen Run, Stallion Branch, and UT to Stallion Branch

Reach Number:

Is this facility a steam electric power plant (sic =4911) with one or more of the following characteristics?

1. Power output 500 MW or greater (not using a cooling pond/lake)
 2. A nuclear power Plant
 3. Cooling water discharge greater than 25% of the receiving stream's 7Q10 flow rate

Is this permit for a municipal separate storm sewer serving a population greater than 100,000?

☐ YES; score is 700 (stop here)☒ NO; (continue)☐ Yes; score is 600 (stop here) ☒ NO; (continue)**FACTOR 1: Toxic Pollutant Potential**

PCS SIC Code: Primary Sic Code: 4581 Other Sic Codes:
 Industrial Subcategory Code: 000 (Code 000 if no subcategory)

Determine the Toxicity potential from Appendix A. Be sure to use the TOTAL toxicity potential column and check one)

Toxicity Group	Code	Points	Toxicity Group	Code	Points	Toxicity Group	Code	Points
<input checked="" type="checkbox"/> No process waste streams	0	0	<input type="checkbox"/> 3.	3	15	<input type="checkbox"/> 7.	7	35
<input type="checkbox"/> 1.	1	5	<input type="checkbox"/> 4.	4	20	<input type="checkbox"/> 8.	8	40
<input type="checkbox"/> 2.	2	10	<input type="checkbox"/> 5.	5	25	<input type="checkbox"/> 9.	9	45
			<input type="checkbox"/> 6.	6	30	<input type="checkbox"/> 10.	10	50

Code Number Checked: 0

Total Points Factor 1: 0**FACTOR 2: Flow/Stream Flow Volume** (Complete either Section A or Section B; check only one)

Section A – Wastewater Flow Only considered

Wastewater Type (see Instructions)	Code	Points
Type I: Flow < 5 MGD	<input type="checkbox"/> 11	0
Flow 5 to 10 MGD	<input type="checkbox"/> 12	10
Flow > 10 to 50 MGD	<input type="checkbox"/> 13	20
Flow > 50 MGD	<input type="checkbox"/> 14	30
Type II: Flow < 1 MGD	<input type="checkbox"/> 21	10
Flow 1 to 5 MGD	<input type="checkbox"/> 22	20
Flow > 5 to 10 MGD	<input type="checkbox"/> 23	30
Flow > 10 MGD	<input type="checkbox"/> 24	50
Type III: Flow < 1 MGD	<input type="checkbox"/> 31	0
Flow 1 to 5 MGD	<input type="checkbox"/> 32	10
Flow > 5 to 10 MGD	<input type="checkbox"/> 33	20
Flow > 10 MGD	<input checked="" type="checkbox"/> 34	30

Section B – Wastewater and Stream Flow Considered

Wastewater Type (see Instructions)	Percent of Instream Wastewater Concentration at Receiving Stream Low Flow	Code	Points
Type I/III:	< 10 %	<input type="checkbox"/> 41	0
	10 % to < 50 %	<input type="checkbox"/> 42	10
	> 50%	<input type="checkbox"/> 43	20
Type II:	< 10 %	<input type="checkbox"/> 51	0
	10 % to < 50 %	<input type="checkbox"/> 52	20
	> 50 %	<input type="checkbox"/> 53	30

Code Checked from Section A or B: 34

Total Points Factor 2: 30

NPDES PERMIT RATING WORK SHEET**FACTOR 3: Conventional Pollutants**

(only when limited by the permit)

A. Oxygen Demanding Pollutants: (check one) ☐ BOD ☐ COD ☐ Other: _____

Permit Limits: (check one)

<input type="checkbox"/>	< 100 lbs/day	1	0
<input type="checkbox"/>	100 to 1000 lbs/day	2	5
<input type="checkbox"/>	> 1000 to 3000 lbs/day	3	15
<input type="checkbox"/>	> 3000 lbs/day	4	20

Code Number Checked: N/A**Points Scored:** 0

B. Total Suspended Solids (TSS)

Permit Limits: (check one)

<input type="checkbox"/>	< 100 lbs/day	1	0
<input type="checkbox"/>	100 to 1000 lbs/day	2	5
<input type="checkbox"/>	> 1000 to 5000 lbs/day	3	15
<input type="checkbox"/>	> 5000 lbs/day	4	20

Code Number Checked: N/A**Points Scored:** 0C. Nitrogen Pollutants: (check one) ☐ Ammonia ☐ Other: _____

Permit Limits: (check one)

	<i>Nitrogen Equivalent</i>	Code	Points
<input type="checkbox"/>	< 300 lbs/day	1	0
<input type="checkbox"/>	300 to 1000 lbs/day	2	5
<input type="checkbox"/>	> 1000 to 3000 lbs/day	3	15
<input type="checkbox"/>	> 3000 lbs/day	4	20

Code Number Checked: N/A**Points Scored:** 0**Total Points Factor 3:** 0**FACTOR 4: Public Health Impact**

Is there a public drinking water supply located within 50 miles downstream of the effluent discharge (this include any body of water to which the receiving water is a tributary)? A public drinking water supply may include infiltration galleries, or other methods of conveyance that ultimately get water from the above reference supply.

☒ YES; (If yes, check toxicity potential number below)☐ NO; (If no, go to Factor 5)

Determine the *Human Health* potential from Appendix A. Use the same SIC doe and subcategory reference as in Factor 1. (Be sure to use the *Human Health* toxicity group column – check one below)

Toxicity Group	Code	Points	Toxicity Group	Code	Points	Toxicity Group	Code	Points
<input checked="" type="checkbox"/> No process waste streams	0	0	<input type="checkbox"/> 3.	3	0	<input type="checkbox"/> 7.	7	15
<input type="checkbox"/> 1.	1	0	<input type="checkbox"/> 4.	4	0	<input type="checkbox"/> 8.	8	20
<input type="checkbox"/> 2.	2	0	<input type="checkbox"/> 5.	5	5	<input type="checkbox"/> 9.	9	25
			<input type="checkbox"/> 6.	6	10	<input type="checkbox"/> 10.	10	30

Code Number Checked: NA**Total Points Factor 4:** 0

NPDES PERMIT RATING WORK SHEET

FACTOR 5: Water Quality Factors

- A. *Is (or will) one or more of the effluent discharge limits based on water quality factors of the receiving stream (rather than technology-base federal effluent guidelines, or technology-base state effluent guidelines), or has a wasteload allocation been to the discharge*

	Code	Points
<input checked="" type="checkbox"/> YES	1	10
<input type="checkbox"/> NO	2	0

- B. *Is the receiving water in compliance with applicable water quality standards for pollutants that are water quality limited in the permit?*

	Code	Points
<input checked="" type="checkbox"/> YES	1	0
<input type="checkbox"/> NO	2	5

- C. *Does the effluent discharged from this facility exhibit the reasonable potential to violate water quality standards due to whole effluent toxicity?*

	Code	Points
<input type="checkbox"/> YES	1	10
<input checked="" type="checkbox"/> NO	2	0

Code Number Checked: A 1 B 1 C 2
Points Factor 5: A 10 + B 0 + C 0 = 10

FACTOR 6: Proximity to Near Coastal Waters

- A. Base Score: Enter flow code here (from factor 2) 34

Check appropriate facility HPRI code (from PCS):

HPRI#	Code	HPRI Score
<input type="checkbox"/> 1	1	20
<input type="checkbox"/> 2	2	0
<input type="checkbox"/> 3	3	30
<input checked="" type="checkbox"/> 4	4	0
<input type="checkbox"/> 5	5	20

Enter the multiplication factor that corresponds to the flow code: _____

Flow Code	Multiplication Factor
11, 31, or 41	0.00
12, 32, or 42	0.05
13, 33, or 43	0.10
14 or 34	0.15
21 or 51	0.10
22 or 52	0.30
23 or 53	0.60
24	1.00

HPRI code checked : 4

Base Score (HPRI Score): 0 X (Multiplication Factor) 0.6 = 0

- B. Additional Points – NEP Program

For a facility that has an HPRI code of 3, does the facility discharge to one of the estuaries enrolled in the National Estuary Protection (NEP) program (see instructions) or the Chesapeake Bay?

Code	Points
<input type="checkbox"/> 1	10
<input checked="" type="checkbox"/> 2	0

- C. Additional Points – Great Lakes Area of Concern

For a facility that has an HPRI code of 5, does the facility discharge any of the pollutants of concern into one of the Great Lakes' 31 area's of concern (see instructions)?

Code	Points
<input type="checkbox"/> 1	10
<input checked="" type="checkbox"/> 2	0

Code Number Checked: A 4 B 2 C 2
Points Factor 6: A 0 + B 0 + C 0 = 0

NPDES PERMIT RATING WORK SHEET

SCORE SUMMARY

<u>Factor</u>	<u>Description</u>	<u>Total Points</u>
1	Toxic Pollutant Potential	0
2	Flows / Streamflow Volume	30
3	Conventional Pollutants	0
4	Public Health Impacts	0
5	Water Quality Factors	10
6	Proximity to Near Coastal Waters	0
TOTAL (Factors 1 through 6)		40

S1. Is the total score equal to or greater than 80 ☐ YES; (Facility is a Major) ☒ NO

S2. If the answer to the above questions is no, would you like this facility to be discretionary major?

☒ NO

☐ YES; (Add 500 points to the above score and provide reason below:

Reason: _____

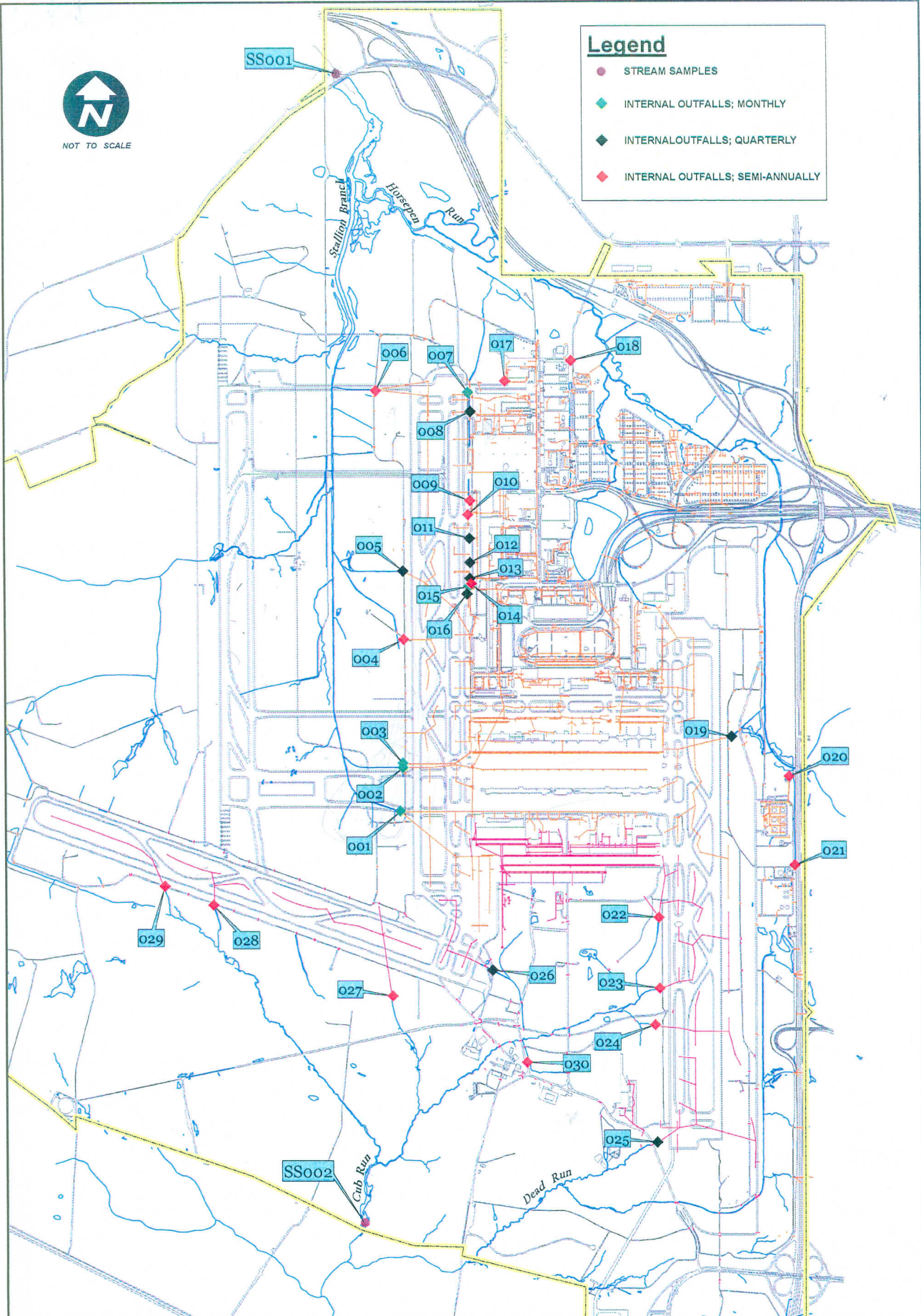
NEW SCORE : 40
OLD SCORE : 30

Permit Reviewer's Name : Susan Mackert
Phone Number: (703) 583-3853
Date: September 19, 2008



Legend

- STREAM SAMPLES
- ◆ INTERNAL OUTFALLS; MONTHLY
- ◆ INTERNAL OUTFALLS; QUARTERLY
- ◆ INTERNAL OUTFALLS; SEMI-ANNUALLY



March 19, 2008

**METROPOLITAN WASHINGTON
AIRPORTS AUTHORITY**
WASHINGTON DULLES INTERNATIONAL AIRPORT
ENGINEERING DIVISION

Outfall Locations

Attachment 3
Page 1 of 1

Outfall 001

Discharge Location: Stallion Branch

Monitoring Frequency: Monthly

Treatment: None

Discussion and/or Changes from Previous Permit:

- ➔ Due to construction activities at the Airport, the physical location of Outfall 001 has shifted slightly from that of the previous reissuance. Industrial activities of concern and airport areas contributing to the storm water runoff have not changed as a result of the re-location.
- ➔ Under the existing permit, the Airport has monitored Dissolved Oxygen as a field parameter only. With this reissuance, the Airport shall report results of DO monitoring on the DMR for the month in which monitoring was conducted.
- ➔ Monitoring and reporting of Total Kjeldahl Nitrogen (TKN) has been added with this reissuance.
- ➔ Monitoring and reporting requirements for Propylene Glycol (PG) have been modified to report a minimum and maximum value. Monthly average reporting is no longer required.
- ➔ Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of the permit, Propylene Glycol monitoring for Outfall 001 shall remain as specified below. Although Propylene Glycol from this outfall will be accounted for by the on-line monitoring at SS001 (Horsepen Lake), it is staff's opinion that monitoring continue for TOC/PG correlation purposes.

Effluent Limitations/Monitoring Requirements: Outfall 001

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Daily Maximum	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NL	N/A	N/A	1/M	Estimate
pH	2	N/A	N/A	NL (S.U.)	NL (S.U.)	1/M	Grab
Dissolved Oxygen (DO)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab
Conductivity	2	NL (µhoms/cm)	NL (µhoms/cm)	N/A	N/A	1/M	Grab
Propylene Glycol ^(a)	2	N/A	NL (mg/L)	NL (mg/L)	NL (mg/L)	1/Event	Grab
Total Petroleum Hydrocarbons (TPH) ^(b)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab
Total Kjeldahl Nitrogen (TKN)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab
Biochemical Oxygen Demand (BOD ₅)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab
Chemical Oxygen Demand (COD)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab
Total Suspended Solids (TSS)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab

The basis for the limitations codes are: *MGD* = Million gallons per day.

1/M = Once per month in which a discharge occurs.

1. Federal Effluent Requirements *N/A* = Not applicable.

1/Event = Once per deicing event in which there is a Propylene Glycol discharge.

2. Best Professional Judgement *NL* = No limit; monitor and report.

3. Water Quality Standards *S.U.* = Standard units.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

Deicing = A period of precipitation in which deicing/anti-icing fluids are applied which occurs 48 hours from the previous precipitation requiring deicing/anti-icing fluid application.

- a. Sampling for Propylene Glycol shall be performed during the months of October – April. Sampling shall be conducted in accordance with current protocols established in the Airport's approved Deicing Management and Monitoring Plan and SWPPP. All field monitoring data and/or results shall be submitted with the DMR for the month in which monitoring was conducted. All samples shall be collected and analyzed in accordance with 40 CFR Part 136, an alternative method approved by EPA or a method approved in advance by the Virginia Department of Environmental Quality.
- b. Total Petroleum Hydrocarbons (TPH) shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW -141 (1995), or by EPA SW-846 Method 8015C for diesel range organics, or by EPA SW-846 Method 8270D. If Method 8270D is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons.

Outfall 002

Discharge Location: UT to Stallion Branch

Monitoring Frequency: Monthly

Treatment: None

Discussion and/or Changes from Previous Permit:

- ➔ Under the existing permit, the Airport has monitored Dissolved Oxygen as a field parameter only. With this reissuance, the Airport shall report results of DO monitoring on the DMR for the month in which monitoring was conducted.
- ➔ Monitoring and reporting of Total Kjeldahl Nitrogen (TKN) has been added with this reissuance.
- ➔ Monitoring and reporting requirements for Propylene Glycol (PG) have been modified to report a minimum and maximum value. Monthly average reporting is no longer required.
- ➔ Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of the permit, Propylene Glycol monitoring for Outfall 002 shall remain as specified below. Although Propylene Glycol from this outfall will be accounted for by the on-line monitoring at SS001 (Horsepen Lake), it is staff's opinion that monitoring continue for TOC/PG correlation purposes.

Effluent Limitations/Monitoring Requirements: Outfall 002

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Daily Maximum	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NL	N/A	N/A	1/M	Estimate
pH	2	N/A	N/A	NL (S.U.)	NL (S.U.)	1/M	Grab
Dissolved Oxygen (DO)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab
Conductivity	2	NL (μhoms/cm)	NL (μhoms/cm)	N/A	N/A	1/M	Grab
Propylene Glycol ^(a)	2	N/A	NL (mg/L)	NL (mg/L)	NL (mg/L)	1/Event	Grab
Total Petroleum Hydrocarbons (TPH) ^(b)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab
Total Kjeldahl Nitrogen (TKN)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab
Biochemical Oxygen Demand (BOD ₅)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab
Chemical Oxygen Demand (COD)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab
Total Suspended Solids (TSS)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab

The basis for the limitations codes are: *MGD* = Million gallons per day.

1/M = Once per month in which a discharge occurs.

1. Federal Effluent Requirements *N/A* = Not applicable.

1/Event = Once per deicing event in which there is a Propylene Glycol discharge.

2. Best Professional Judgement *NL* = No limit; monitor and report.

3. Water Quality Standards *S.U.* = Standard units.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

Deicing Event = A period of precipitation in which deicing/anti-icing fluids are applied which occurs 48 hours from the previous precipitation requiring deicing/anti-icing fluid application.

- a. Sampling for Propylene Glycol shall be performed during the months of October – April. Sampling shall be conducted in accordance with current protocols established in the Airport's approved Deicing Management and Monitoring Plan and SWPPP. All field monitoring data and/or results shall be submitted with the DMR for the month in which monitoring was conducted. All samples shall be collected and analyzed in accordance with 40 CFR Part 136, an alternative method approved by EPA or a method approved in advance by the Virginia Department of Environmental Quality.
- b. Total Petroleum Hydrocarbons (TPH) shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW-141 (1995), or by EPA SW-846 Method 8015C for diesel range organics, or by EPA SW-846 Method 8270D. If Method 8270D is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons.

Outfall 003

Discharge Location: UT to Stallion Branch

Monitoring Frequency: Monthly

Treatment: None

Discussion and/or Changes from Previous Permit:

- ➔ Under the existing permit, the Airport has monitored Dissolved Oxygen as a field parameter only. With this reissuance, the Airport shall report results of DO monitoring on the DMR for the month in which monitoring was conducted.
- ➔ Monitoring and reporting of Total Kjeldahl Nitrogen (TKN) has been added with this reissuance.
- ➔ Monitoring and reporting requirements for Propylene Glycol (PG) have been modified to report a minimum and maximum value. Monthly average reporting is no longer required.
- ➔ Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of the permit, Propylene Glycol monitoring for Outfall 003 shall remain as specified below. Although Propylene Glycol from this outfall will be accounted for by the on-line monitoring at SS001 (Horsepen Lake), it is staff's opinion that monitoring continue for TOC/PG correlation purposes.

Effluent Limitations/Monitoring Requirements: Outfall 003

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Daily Maximum	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NL	N/A	N/A	1/M	Estimate
pH	2	N/A	N/A	NL (S.U.)	NL (S.U.)	1/M	Grab
Dissolved Oxygen (DO)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab
Conductivity	2	NL (µhoms/cm)	NL (µhoms/cm)	N/A	N/A	1/M	Grab
Propylene Glycol ^(a)	2	N/A	NL (mg/L)	NL (mg/L)	NL (mg/L)	1/Event	Grab
Total Petroleum Hydrocarbons (TPH) ^(b)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab
Total Kjeldahl Nitrogen (TKN)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab
Biochemical Oxygen Demand (BOD ₅)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab
Chemical Oxygen Demand (COD)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab
Total Suspended Solids (TSS)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab

The basis for the limitations codes are:

MGD = Million gallons per day.

1/M = Once per month in which a discharge occurs.

1. Federal Effluent Requirements

N/A = Not applicable.

1/Event = Once per deicing event in which there is a Propylene Glycol discharge.

2. Best Professional Judgement

NL = No limit; monitor and report.

3. Water Quality Standards

S.U. = Standard units.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

Deicing = A period of precipitation in which deicing/anti-icing fluids are applied which occurs 48 hours from the previous precipitation requiring deicing/anti-icing fluid application.

- a. Sampling for Propylene Glycol shall be performed during the months of October – April. Sampling shall be conducted in accordance with current protocols established in the Airport's approved Deicing Management and Monitoring Plan and SWPPP. All field monitoring data and/or results shall be submitted with the DMR for the month in which monitoring was conducted. All samples shall be collected and analyzed in accordance with 40 CFR Part 136, an alternative method approved by EPA or a method approved in advance by the Virginia Department of Environmental Quality.
- b. Total Petroleum Hydrocarbons (TPH) shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW-141 (1995), or by EPA SW-846 Method 8015C for diesel range organics, or by EPA SW-846 Method 8270D. If Method 8270D is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons.

Outfall 004

Discharge Location: UT to Stallion Branch

Monitoring Frequency: Quarterly

Treatment: None

Discussion and/or Changes from Previous Permit:

- ➔ The monitoring frequency for this outfall has been modified from semi-annually to quarterly. This change is prompted by the implementation of representative sampling, and is not the result of non-compliance on the part of the Airport.

Outfall 004 is the first of three non-application area outfalls (004, 005, and 006) located along Runway 1C north of those outfalls (001, 002, and 003) which have the greatest potential for Propylene Glycol (PG) contamination. It is estimated that approximately 25% of the PG that is applied to an aircraft shears off during takeoff. Due to the location of this outfall along the runway, it is likely that the vast majority of PG has already dissipated from the aircraft and has been accounted for via sampling at Outfalls 001, 002, and 003. A review of monitoring data submitted by the Airport indicates that PG has not been detected at Outfall 004, and that there is very little flow.

The industrial activities of concern (PG shearing) and airport areas contributing to the storm water runoff (i.e., the location of the outfalls along Runway 1C) are substantially identical for Outfalls 004, 005, and 006, and it is staff's opinion that the discharge from these outfalls will also be substantially identical. The Airport may test the discharge from just one of the outfalls (005) and report that the data also applies to the substantially identical outfall (004). Staff believes representative sampling is adequate for these three outfalls as the discharge ultimately reaches Horsepen Lake which is again monitored at in-stream location SS001.

Outfall 005 was selected for testing because of its location between Outfall 004 and Outfall 006, and that PG has been detected at the outfall. Because of shearing, less PG enters the storm water drainage system as aircraft reach Outfalls 004, 005, and 006 during takeoff. As such, a gradual reduction in the concentrations of the parameters being monitored is expected from Outfall 004 to Outfall 005 and again from Outfall 005 to Outfall 006. It is staff's opinion that by monitoring Outfall 005 a representative average value can be obtained for Outfalls 004, 005, and 006 since they are substantially identical.

- ➔ Under the existing permit, the Airport has monitored Dissolved Oxygen as a field parameter only. With this reissuance, the Airport shall report results of DO monitoring on the DMR for the month in which monitoring was conducted.
- ➔ Monitoring and reporting of Total Kjeldahl Nitrogen (TKN) has been added with this reissuance.
- ➔ Monitoring and reporting requirements for Propylene Glycol (PG) have been modified to report a minimum and maximum value. Monthly average reporting is no longer required.
- ➔ Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of the permit, Propylene Glycol monitoring shall be suspended for Outfall 004. It is staff's opinion that any Propylene Glycol from this outfall will be accounted for by the on-line monitoring at SS001 (Horsepen Lake).

Effluent Limitations/Monitoring Requirements: Outfall 004

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date. Discharge data from Outfall 005 may be submitted to represent Outfall 004.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Frequency^(c)</u>	<u>Sample Type</u>
Flow (MGD)	NA	NL	NL	N/A	N/A	1/3M	Estimate
pH	2	N/A	N/A	NL (S.U.)	NL (S.U.)	1/3M	Grab
Dissolved Oxygen (DO)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Conductivity	2	NL (μhoms/cm)	NL (μhoms/cm)	N/A	N/A	1/3M	Grab
Propylene Glycol ^(a)	2	N/A	NL (mg/L)	NL (mg/L)	NL (mg/L)	1/3M	Grab
Total Petroleum Hydrocarbons (TPH) ^(b)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Kjeldahl Nitrogen (TKN)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Biochemical Oxygen Demand (BOD ₅)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Chemical Oxygen Demand (COD)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Suspended Solids (TSS)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab

The basis for the limitations codes are: *MGD* = Million gallons per day.

1/3M = Once every three months in which a discharge occurs.

1. Federal Effluent Requirements *N/A* = Not applicable.
2. Best Professional Judgement *NL* = No limit; monitor and report.
3. Water Quality Standards *S.U.* = Standard units.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

- a. Sampling for Propylene Glycol shall be performed during the months of October – April. Sampling shall be conducted in accordance with current protocols established in the Airport's approved Deicing Management and Monitoring Plan and SWPPP. All field monitoring data and/or results shall be submitted with the DMR for the month in which monitoring was conducted. All samples shall be collected and analyzed in accordance with 40 CFR Part 136, an alternative method approved by EPA or a method approved in advance by the Virginia Department of Environmental Quality. Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of this permit, Propylene Glycol monitoring shall be suspended for Outfall 004.
- b. Total Petroleum Hydrocarbons (TPH) shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW-141 (1995), or by EPA SW-846 Method 8015C for diesel range organics, or by EPA SW-846 Method 8270D. If Method 8270D is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons.
- c. The quarterly monitoring periods shall be January 1 – March 31, April 1 – June 30, July 1 – September 30, and October 1 – December 31. The DMR shall be submitted no later than the 10th day of the month following the monitoring period (April 10, July 10, October 10 and January 10, respectively).

Outfall 005

Discharge Location: UT to Stallion Branch

Monitoring Frequency: Quarterly

Treatment: None

Discussion and/or Changes from Previous Permit:

- ➔ Representative sampling is being implemented with this reissuance.

Outfall 005 is the second of three non-application area outfalls (004, 005, and 006) located along Runway 1C north of those outfalls (001, 002, and 003) which have the greatest potential for Propylene Glycol (PG) contamination. It is estimated that approximately 25% of the PG that is applied to an aircraft shears off during takeoff. Due to the location of this outfall along the runway, it is likely that the vast majority of PG has already dissipated from the aircraft and has been accounted for via sampling at Outfalls 001, 002, and 003. A review of monitoring data submitted by the Airport indicates that PG has been detected at Outfall 005, and that there is some flow.

The industrial activities of concern (PG shearing) and airport areas contributing to the storm water runoff (i.e., the location of the outfalls along Runway 1C) are substantially identical for Outfalls 004, 005, and 006, and it is staff's opinion that the discharge from these outfalls will also be substantially identical. The Airport may test the discharge from just one of the outfalls (005) and report that the data also applies to the substantially identical outfalls (004 and 006). Staff believes representative sampling is adequate for these three outfalls as the discharge ultimately reaches Horsepen Lake which is again monitored at in-stream location SS001.

Outfall 005 was selected for testing because of its location between Outfall 004 and Outfall 006, and that PG has been detected at the outfall. Because of shearing, less PG enters the storm water drainage system as aircraft reach Outfalls 004, 005, and 006 during takeoff. As such, a gradual reduction in the concentrations of the parameters being monitored is expected from Outfall 004 to Outfall 005 and again from Outfall 005 to Outfall 006. It is staff's opinion that by monitoring Outfall 005 a representative average value can be obtained for Outfalls 004, 005, and 006 since they are substantially identical.

- ➔ Under the existing permit, the Airport has monitored Dissolved Oxygen as a field parameter only. With this reissuance, the Airport shall report results of DO monitoring on the DMR for the month in which monitoring was conducted.
- ➔ Monitoring and reporting of Total Kjeldahl Nitrogen (TKN) has been added with this reissuance.
- ➔ Monitoring and reporting requirements for Propylene Glycol (PG) have been modified to report a minimum and maximum value. Monthly average reporting is no longer required.
- ➔ Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of the permit, Propylene Glycol monitoring shall be suspended for Outfall 005. It is staff's opinion that any Propylene Glycol from this outfall will be accounted for by the on-line monitoring at SS001 (Horsepen Lake).

Effluent Limitations/Monitoring Requirements: Outfall 005

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date. Discharge data from Outfall 005 may be submitted to represent Outfall 004 and Outfall 006.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Frequency^(c)</u>	<u>Sample Type</u>
Flow (MGD)	NA	NL	NL	N/A	N/A	1/3M	Estimate
pH	2	N/A	N/A	NL (S.U.)	NL (S.U.)	1/3M	Grab
Dissolved Oxygen (DO)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Conductivity	2	NL (μhoms/cm)	NL (μhoms/cm)	N/A	N/A	1/3M	Grab
Propylene Glycol ^(a)	2	N/A	NL (mg/L)	NL (mg/L)	NL (mg/L)	1/3M	Grab
Total Petroleum Hydrocarbons (TPH) ^(b)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Kjeldahl Nitrogen (TKN)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Biochemical Oxygen Demand (BOD ₅)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Chemical Oxygen Demand (COD)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Suspended Solids (TSS)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab

The basis for the limitations codes are: *MGD* = Million gallons per day.

1/3M = Once every three months in which a discharge occurs.

1. Federal Effluent Requirements *N/A* = Not applicable.
2. Best Professional Judgement *NL* = No limit; monitor and report.
3. Water Quality Standards *S.U.* = Standard units.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

- a. Sampling for Propylene Glycol shall be performed during the months of October – April. Sampling shall be conducted in accordance with current protocols established in the Airport's approved Deicing Management and Monitoring Plan and SWPPP. All field monitoring data and/or results shall be submitted with the DMR for the month in which monitoring was conducted. All samples shall be collected and analyzed in accordance with 40 CFR Part 136, an alternative method approved by EPA or a method approved in advance by the Virginia Department of Environmental Quality. Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of this permit, Propylene Glycol monitoring shall be suspended for Outfall 005.
- b. Total Petroleum Hydrocarbons (TPH) shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW -141 (1995), or by EPA SW-846 Method 8015C for diesel range organics, or by EPA SW-846 Method 8270D. If Method 8270D is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons.
- c. The quarterly monitoring periods shall be January 1 – March 31, April 1 – June 30, July 1 – September 30, and October 1 – December 31. The DMR shall be submitted no later than the 10th day of the month following the monitoring period (April 10, July 10, October 10 and January 10, respectively).

Outfall 006

Discharge Location: UT to Stallion Branch

Monitoring Frequency: Quarterly

Treatment: None

Discussion and/or Changes from Previous Permit:

- ➔ The monitoring frequency for this outfall has been modified from semi-annually to quarterly. This change is prompted by the implementation of representative sampling, and is not the result of non-compliance on the part of the Airport.

Outfall 006 is the last of three non-application area outfalls (004, 005, and 006) located along Runway 1C north of those outfalls (001, 002, and 003) which have the greatest potential for Propylene Glycol (PG) contamination. It is estimated that approximately 25% of the PG that is applied to an aircraft shears off during takeoff. Due to the location of this outfall along the runway, it is likely that the vast majority of PG has already dissipated from the aircraft and has been accounted for via sampling at Outfalls 001, 002, and 003. A review of monitoring data submitted by the Airport indicates that PG has not been detected at Outfall 006, and that there is very little flow.

The industrial activities of concern (PG shearing) and airport areas contributing to the storm water runoff (i.e., the location of the outfalls along Runway 1C) are substantially identical for Outfalls 004, 005, and 006, and it is staff's opinion that the discharge from these outfalls will also be substantially identical. The Airport may test the discharge from just one of the outfalls (005) and report that the data also applies to the substantially identical outfall (006). Staff believes representative sampling is adequate for these three outfalls as the discharge ultimately reaches Horsepen Lake which is again monitored at in-stream location SS001.

Outfall 005 was selected for testing because of its location between Outfall 004 and Outfall 006, and that PG has been detected at the outfall. Because of shearing, less PG enters the storm water drainage system as aircraft reach Outfalls 004, 005, and 006 during takeoff. As such, a gradual reduction in the concentrations of the parameters being monitored is expected from Outfall 004 to Outfall 005 and again from Outfall 005 to Outfall 006. It is staff's opinion that by monitoring Outfall 005 a representative average value can be obtained for Outfalls 004, 005, and 006 since they are substantially identical.

- ➔ Under the existing permit, the Airport has monitored Dissolved Oxygen as a field parameter only. With this reissuance, the Airport shall report results of DO monitoring on the DMR for the month in which monitoring was conducted.
- ➔ Monitoring and reporting of Total Kjeldahl Nitrogen (TKN) has been added with this reissuance.
- ➔ Monitoring and reporting requirements for Propylene Glycol (PG) have been modified to report a minimum and maximum value. Monthly average reporting is no longer required.
- ➔ Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of the permit, Propylene Glycol monitoring shall be suspended for Outfall 006. It is staff's opinion that any Propylene Glycol from this outfall will be accounted for by the on-line monitoring at SS001 (Horsepen Lake).

Effluent Limitations/Monitoring Requirements: Outfall 006

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date. Discharge data from Outfall 005 may be submitted to represent Outfall 006.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Frequency^(c)</u>	<u>Sample Type</u>
Flow (MGD)	NA	NL	NL	N/A	N/A	1/3M	Estimate
pH	2	N/A	N/A	NL (S.U.)	NL (S.U.)	1/3M	Grab
Dissolved Oxygen (DO)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Conductivity	2	NL (μhoms/cm)	NL (μhoms/cm)	N/A	N/A	1/3M	Grab
Propylene Glycol ^(a)	2	N/A	NL (mg/L)	NL (mg/L)	NL (mg/L)	1/3M	Grab
Total Petroleum Hydrocarbons (TPH) ^(b)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Kjeldahl Nitrogen (TKN)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Biochemical Oxygen Demand (BOD ₅)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Chemical Oxygen Demand	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Suspended Solids (TSS)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab

The basis for the limitations codes are: *MGD* = Million gallons per day.

1/3M = Once every three months in which a discharge occurs.

1. Federal Effluent Requirements *N/A* = Not applicable.
2. Best Professional Judgement *NL* = No limit; monitor and report.
3. Water Quality Standards *S.U.* = Standard units.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

- a. Sampling for Propylene Glycol shall be performed during the months of October – April. Sampling shall be conducted in accordance with current protocols established in the Airport's approved Deicing Management and Monitoring Plan and SWPPP. All field monitoring data and/or results shall be submitted with the DMR for the month in which monitoring was conducted. All samples shall be collected and analyzed in accordance with 40 CFR Part 136, an alternative method approved by EPA or a method approved in advance by the Virginia Department of Environmental Quality. Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of this permit, Propylene Glycol monitoring shall be suspended for Outfall 006.
- b. Total Petroleum Hydrocarbons (TPH) shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW -141 (1995), or by EPA SW-846 Method 8015C for diesel range organics, or by EPA SW-846 Method 8270D. If Method 8270D is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons.
- c. The quarterly monitoring periods shall be January 1 – March 31, April 1 – June 30, July 1 – September 30, and October 1 – December 31. The DMR shall be submitted no later than the 10th day of the month following the monitoring period (April 10, July 10, October 10 and January 10, respectively).

Outfall 007

Discharge Location: UT to Horsepen Run

Monitoring Frequency: Quarterly

Treatment: Oil-Water Separator

Discussion and/or Changes from Previous Permit:

- ➔ Due to construction activities at the Airport, the physical location of Outfall 007 has shifted slightly from that of the previous reissuance. Industrial activities of concern and airport areas contributing to the storm water runoff have not changed as a result of the re-location.
- ➔ The monitoring frequency for this outfall has been modified from monthly to quarterly. This change is prompted by the implementation of representative sampling.

Outfall 007 is the last in a series of ten outfalls (007, 008, 009, 010, 011, 012, 013, 014, 015, and 016) located along the cargo ramp and Landmark Aviation areas. Deicing does occur within this area so there is potential for Propylene Glycol (PG) contamination. Drains are plugged during deicing events with PG being recovered by GRVs. If 100% recovery of PG is not attained, runoff may potentially discharge via Outfalls 007, 008, 009, 010, 011, 012, 013, 014, 015, and 016 to a large drainage ditch adjacent to the cargo ramp / Landmark Aviation area. Of the ten outfalls, seven are provided additional treatment through oil-water separators. A review of monitoring data submitted by the Airport indicates that PG has been detected at Outfall 007, and that there is very little flow.

The industrial activities of concern (PG) and airport areas contributing to the storm water runoff (i.e., the location of the outfalls along the cargo ramp and Landmark Aviation areas) are substantially identical for Outfalls 007, 008, 009, 010, 011, 012, 013, 014, 015, and 016. It is staff's opinion that the discharge from these outfalls will also be substantially identical. The Airport may test the discharge from just one of the outfalls (015) and report that the data also applies to the substantially identical outfall (007). Staff believes representative sampling is adequate for these ten outfalls as the discharge ultimately reaches a newly designated in-stream monitoring location (SS003) and Horsepen Lake which is again monitored at in-stream location SS001.

Outfall 015 was selected for testing because it receives a higher flow volume than the other outfalls, thereby providing a more representative and accurate sample. It is staff's opinion that by monitoring Outfall 015 a representative value can be obtained for Outfalls 007, 008, 009, 010, 011, 012, 013, 014, and 016 since they are substantially identical.

- ➔ Under the existing permit, the Airport has monitored Dissolved Oxygen as a field parameter only. With this reissuance, the Airport shall report results of DO monitoring on the DMR for the month in which monitoring was conducted.
- ➔ Monitoring and reporting of Total Kjeldahl Nitrogen (TKN) has been added with this reissuance.
- ➔ Monitoring and reporting requirements for Propylene Glycol (PG) have been modified to report a minimum and maximum value. Monthly average reporting is no longer required.
- ➔ Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of the permit, Propylene Glycol monitoring shall be suspended for Outfall 007. It is staff's opinion that any Propylene Glycol from this outfall will be accounted for by the on-line monitoring at SS001 (Horsepen Lake).

Effluent Limitations/Monitoring Requirements: Outfall 007

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date. Discharge data from Outfall 015 may be submitted to represent Outfall 007.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Frequency^(c)</u>	<u>Sample Type</u>
Flow (MGD)	NA	NL	NL	N/A	N/A	1/3M	Estimate
pH	2	N/A	N/A	NL (S.U.)	NL (S.U.)	1/3M	Grab
Dissolved Oxygen (DO)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Conductivity	2	NL (μhoms/cm)	NL (μhoms/cm)	N/A	N/A	1/3M	Grab
Propylene Glycol ^(a)	2	N/A	NL (mg/L)	NL (mg/L)	NL (mg/L)	1/3M	Grab
Total Petroleum Hydrocarbons (TPH) ^(b)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Kjeldahl Nitrogen (TKN)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Biochemical Oxygen Demand (BOD ₅)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Chemical Oxygen Demand (COD)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Suspended Solids (TSS)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab

The basis for the limitations codes are: *MGD* = Million gallons per day.

1/3M = Once every three months in which a discharge occurs.

1. Federal Effluent Requirements *N/A* = Not applicable.
2. Best Professional Judgement *NL* = No limit; monitor and report.
3. Water Quality Standards *S.U.* = Standard units.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

- a. Sampling for Propylene Glycol shall be performed during the months of October – April. Sampling shall be conducted in accordance with current protocols established in the Airport's approved Deicing Management and Monitoring Plan and SWPPP. All field monitoring data and/or results shall be submitted with the DMR for the month in which monitoring was conducted. All samples shall be collected and analyzed in accordance with 40 CFR Part 136, an alternative method approved by EPA or a method approved in advance by the Virginia Department of Environmental Quality. Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of this permit, Propylene Glycol monitoring shall be suspended for Outfall 007.
- b. Total Petroleum Hydrocarbons (TPH) shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW -141 (1995), or by EPA SW-846 Method 8015C for diesel range organics, or by EPA SW-846 Method 8270D. If Method 8270D is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons.
- c. The quarterly monitoring periods shall be January 1 – March 31, April 1 – June 30, July 1 – September 30, and October 1 – December 31. The DMR shall be submitted no later than the 10th day of the month following the monitoring period (April 10, July 10, October 10 and January 10, respectively).

Outfall 008

Discharge Location: UT to Horsepen Run

Monitoring Frequency: Quarterly

Treatment: None

Discussion and/or Changes from Previous Permit:

- ➔ Representative sampling is being implemented with this reissuance.

Outfall 008 is next to last in a series of ten outfalls (007, 008, 009, 010, 011, 012, 013, 014, 015, and 016) located along the cargo ramp and Landmark Aviation areas. Deicing does occur within this area so there is potential for Propylene Glycol (PG) contamination. Drains are plugged during deicing events with PG being recovered by GRVs. If 100% recovery of PG is not attained, runoff may potentially discharge via Outfalls 007, 008, 009, 010, 011, 012, 013, 014, 015, and 016 to a large drainage ditch adjacent to the cargo ramp / Landmark Aviation area. Of the ten outfalls, seven are provided additional treatment through oil-water separators. A review of monitoring data submitted by the Airport indicates that PG has been detected at Outfall 008, and that there is very little flow.

The industrial activities of concern (PG) and airport areas contributing to the storm water runoff (i.e., the location of the outfalls along the cargo ramp and Landmark Aviation areas) are substantially identical for Outfalls 007, 008, 009, 010, 011, 012, 013, 014, 015, and 016. It is staff's opinion that the discharge from these outfalls will also be substantially identical. The Airport may test the discharge from just one of the outfalls (015) and report that the data also applies to the substantially identical outfall (008). Staff believes representative sampling is adequate for these ten outfalls as the discharge ultimately reaches a newly designated in-stream monitoring location (SS003) and Horsepen Lake which is again monitored at in-stream location SS001.

Outfall 015 was selected for testing because it receives a higher flow volume than the other outfalls, thereby providing a more representative and accurate sample. It is staff's opinion that by monitoring Outfall 015 a representative value can be obtained for Outfalls 007, 008, 009, 010, 011, 012, 013, 014, and 016 since they are substantially identical.

- ➔ Under the existing permit, the Airport has monitored Dissolved Oxygen as a field parameter only. With this reissuance, the Airport shall report results of DO monitoring on the DMR for the month in which monitoring was conducted.
- ➔ Monitoring and reporting of Total Kjeldahl Nitrogen (TKN) has been added with this reissuance.
- ➔ Monitoring and reporting requirements for Propylene Glycol (PG) have been modified to report a minimum and maximum value. Monthly average reporting is no longer required.
- ➔ Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of the permit, Propylene Glycol monitoring shall be suspended for Outfall 008. It is staff's opinion that any Propylene Glycol from this outfall will be accounted for by the on-line monitoring at SS001 (Horsepen Lake).

Effluent Limitations/Monitoring Requirements: Outfall 008

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date. Discharge data from Outfall 015 may be submitted to represent Outfall 008.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Frequency^(c)</u>	<u>Sample Type</u>
Flow (MGD)	NA	NL	NL	N/A	N/A	1/3M	Estimate
pH	2	N/A	N/A	NL (S.U.)	NL (S.U.)	1/3M	Grab
Dissolved Oxygen (DO)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Conductivity	2	NL (μhoms/cm)	NL (μhoms/cm)	N/A	N/A	1/3M	Grab
Propylene Glycol ^(a)	2	N/A	NL (mg/L)	NL (mg/L)	NL (mg/L)	1/3M	Grab
Total Petroleum Hydrocarbons (TPH) ^(b)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Kjeldahl Nitrogen (TKN)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Biochemical Oxygen Demand (BOD ₅)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Chemical Oxygen Demand (COD)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Suspended Solids (TSS)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab

The basis for the limitations codes are:

MGD = Million gallons per day.

1/3M = Once every three months in which a discharge occurs.

1. Federal Effluent Requirements

N/A = Not applicable.

2. Best Professional Judgement

NL = No limit; monitor and report.

3. Water Quality Standards

S.U. = Standard units.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

- Sampling for Propylene Glycol shall be performed during the months of October – April. Sampling shall be conducted in accordance with current protocols established in the Airport's approved Deicing Management and Monitoring Plan and SWPPP. All field monitoring data and/or results shall be submitted with the DMR for the month in which monitoring was conducted. All samples shall be collected and analyzed in accordance with 40 CFR Part 136, an alternative method approved by EPA or a method approved in advance by the Virginia Department of Environmental Quality. Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of this permit, Propylene Glycol monitoring shall be suspended for Outfall 008.
- Total Petroleum Hydrocarbons (TPH) shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW -141 (1995), or by EPA SW-846 Method 8015C for diesel range organics, or by EPA SW-846 Method 8270D. If Method 8270D is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons.
- The quarterly monitoring periods shall be January 1 – March 31, April 1 – June 30, July 1 – September 30, and October 1 – December 31. The DMR shall be submitted no later than the 10th day of the month following the monitoring period (April 10, July 10, October 10 and January 10, respectively).

Outfall 009

Discharge Location: UT to Horsepen Run

Monitoring Frequency: Quarterly

Treatment: Oil-Water Separator

Discussion and/or Changes from Previous Permit:

- ➔ The monitoring frequency for this outfall has been modified from semi-annually to quarterly. This change is prompted by the implementation of representative sampling, and is not the result of non-compliance on the part of the Airport.

Outfall 009 is third from last in a series of ten outfalls (007, 008, 009, 010, 011, 012, 013, 014, 015, and 016) located along the cargo ramp and Landmark Aviation areas. Deicing does occur within this area so there is potential for Propylene Glycol (PG) contamination. Drains are plugged during deicing events with PG being recovered by GRVs. If 100% recovery of PG is not attained, runoff may potentially discharge via Outfalls 007, 008, 009, 010, 011, 012, 013, 014, 015, and 016 to a large drainage ditch adjacent to the cargo ramp / Landmark Aviation area. Of the ten outfalls, seven are provided additional treatment through oil-water separators. A review of monitoring data submitted by the Airport indicates that PG has not been detected at Outfall 009, and that there is very little flow.

The industrial activities of concern (PG) and airport areas contributing to the storm water runoff (i.e., the location of the outfalls along the cargo ramp and Landmark Aviation areas) are substantially identical for Outfalls 007, 008, 009, 010, 011, 012, 013, 014, 015, and 016. It is staff's opinion that the discharge from these outfalls will also be substantially identical. The Airport may test the discharge from just one of the outfalls (015) and report that the data also applies to the substantially identical outfall (009). Staff believes representative sampling is adequate for these ten outfalls as the discharge ultimately reaches a newly designated in-stream monitoring location (SS003) and Horsepen Lake which is again monitored at in-stream location SS001.

Outfall 015 was selected for testing because it receives a higher flow volume than the other outfalls, thereby providing a more representative and accurate sample. It is staff's opinion that by monitoring Outfall 015 a representative value can be obtained for Outfalls 007, 008, 009, 010, 011, 012, 013, 014, and 016 since they are substantially identical.

- ➔ Under the existing permit, the Airport has monitored Dissolved Oxygen as a field parameter only. With this reissuance, the Airport shall report results of DO monitoring on the DMR for the month in which monitoring was conducted.
- ➔ Monitoring and reporting of Total Kjeldahl Nitrogen (TKN) has been added with this reissuance.
- ➔ Monitoring and reporting requirements for Propylene Glycol (PG) have been modified to report a minimum and maximum value. Monthly average reporting is no longer required.
- ➔ Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of the permit, Propylene Glycol monitoring shall be suspended for Outfall 009. It is staff's opinion that any Propylene Glycol from this outfall will be accounted for by the on-line monitoring at SS001 (Horsepen Lake).

Effluent Limitations/Monitoring Requirements: Outfall 009

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date. Discharge data from Outfall 015 may be submitted to represent Outfall 009.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Frequency^(c)</u>	<u>Sample Type</u>
Flow (MGD)	NA	NL	NL	N/A	N/A	1/3M	Estimate
pH	2	N/A	N/A	NL (S.U.)	NL (S.U.)	1/3M	Grab
Dissolved Oxygen (DO)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Conductivity	2	NL (μhoms/cm)	NL (μhoms/cm)	N/A	N/A	1/3M	Grab
Propylene Glycol ^(a)	2	N/A	NL (mg/L)	NL (mg/L)	NL (mg/L)	1/3M	Grab
Total Petroleum Hydrocarbons (TPH) ^(b)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Kjeldahl Nitrogen (TKN)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Biochemical Oxygen Demand (BOD ₅)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Chemical Oxygen Demand (COD)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Suspended Solids (TSS)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab

The basis for the limitations codes are:

MGD = Million gallons per day.

1/3M = Once every three months in which a discharge occurs.

1. Federal Effluent Requirements

N/A = Not applicable.

2. Best Professional Judgement

NL = No limit; monitor and report.

3. Water Quality Standards

S.U. = Standard units.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

- Sampling for Propylene Glycol shall be performed during the months of October – April. Sampling shall be conducted in accordance with current protocols established in the Airport's approved Deicing Management and Monitoring Plan and SWPPP. All field monitoring data and/or results shall be submitted with the DMR for the month in which monitoring was conducted. All samples shall be collected and analyzed in accordance with 40 CFR Part 136, an alternative method approved by EPA or a method approved in advance by the Virginia Department of Environmental Quality. Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of this permit, Propylene Glycol monitoring shall be suspended for Outfall 009.
- Total Petroleum Hydrocarbons (TPH) shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW -141 (1995), or by EPA SW-846 Method 8015C for diesel range organics, or by EPA SW-846 Method 8270D. If Method 8270D is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons.
- The quarterly monitoring periods shall be January 1 – March 31, April 1 – June 30, July 1 – September 30, and October 1 – December 31. The DMR shall be submitted no later than the 10th day of the month following the monitoring period (April 10, July 10, October 10 and January 10, respectively).

Outfall 010

Discharge Location: UT to Horsepen Run

Monitoring Frequency: Quarterly

Treatment: Oil-Water Separator

Discussion and/or Changes from Previous Permit:

- ➔ The monitoring frequency for this outfall has been modified from semi-annually to quarterly. This change is prompted by the implementation of representative sampling, and is not the result of non-compliance on the part of the Airport.

Outfall 010 is in a series of ten outfalls (007, 008, 009, 010, 011, 012, 013, 014, 015, and 016) located along the cargo ramp and Landmark Aviation areas. Deicing does occur within this area so there is potential for Propylene Glycol (PG) contamination. Drains are plugged during deicing events with PG being recovered by GRVs. If 100% recovery of PG is not attained, runoff may potentially discharge via Outfalls 007, 008, 009, 010, 011, 012, 013, 014, 015, and 016 to a large drainage ditch adjacent to the cargo ramp / Landmark Aviation area. Of the ten outfalls, seven are provided additional treatment through oil-water separators. A review of monitoring data submitted by the Airport indicates that PG has not been detected at Outfall 010, and that there is very little flow.

The industrial activities of concern (PG) and airport areas contributing to the storm water runoff (i.e., the location of the outfalls along the cargo ramp and Landmark Aviation areas) are substantially identical for Outfalls 007, 008, 009, 010, 011, 012, 013, 014, 015, and 016. It is staff's opinion that the discharge from these outfalls will also be substantially identical. The Airport may test the discharge from just one of the outfalls (015) and report that the data also applies to the substantially identical outfall (010). Staff believes representative sampling is adequate for these ten outfalls as the discharge ultimately reaches a newly designated in-stream monitoring location (SS003) and Horsepen Lake which is again monitored at in-stream location SS001.

Outfall 015 was selected for testing because it receives a higher flow volume than the other outfalls, thereby providing a more representative and accurate sample. It is staff's opinion that by monitoring Outfall 015 a representative value can be obtained for Outfalls 007, 008, 009, 010, 011, 012, 013, 014, and 016 since they are substantially identical.

- ➔ Under the existing permit, the Airport has monitored Dissolved Oxygen as a field parameter only. With this reissuance, the Airport shall report results of DO monitoring on the DMR for the month in which monitoring was conducted.
- ➔ Monitoring and reporting of Total Kjeldahl Nitrogen (TKN) has been added with this reissuance.
- ➔ Monitoring and reporting requirements for Propylene Glycol (PG) have been modified to report a minimum and maximum value. Monthly average reporting is no longer required.
- ➔ Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of the permit, Propylene Glycol monitoring shall be suspended for Outfall 010. It is staff's opinion that any Propylene Glycol from this outfall will be accounted for by the on-line monitoring at SS001 (Horsepen Lake).

Effluent Limitations/Monitoring Requirements: Outfall 010

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date. Discharge data from Outfall 015 may be submitted to represent Outfall 010.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Daily Maximum	Minimum	Maximum	Frequency ^(c)	Sample Type
Flow (MGD)	NA	NL	NL	N/A	N/A	1/3M	Estimate
pH	2	N/A	N/A	NL (S.U.)	NL (S.U.)	1/3M	Grab
Dissolved Oxygen (DO)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Conductivity	2	NL (µhoms/cm)	NL (µhoms/cm)	N/A	N/A	1/3M	Grab
Propylene Glycol ^(a)	2	N/A	NL (mg/L)	NL (mg/L)	NL (mg/L)	1/3M	Grab
Total Petroleum Hydrocarbons (TPH) ^(b)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Kjeldahl Nitrogen (TKN)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Biochemical Oxygen Demand (BOD ₅)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Chemical Oxygen Demand (COD)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Suspended Solids (TSS)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab

The basis for the limitations codes are:

MGD = Million gallons per day.

1/3M = Once every three months in which a discharge occurs.

1. Federal Effluent Requirements *N/A* = Not applicable.
2. Best Professional Judgement *NL* = No limit; monitor and report.
3. Water Quality Standards *S.U.* = Standard units.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

- a. Sampling for Propylene Glycol shall be performed during the months of October – April. Sampling shall be conducted in accordance with current protocols established in the Airport's approved Deicing Management and Monitoring Plan and SWPPP. All field monitoring data and/or results shall be submitted with the DMR for the month in which monitoring was conducted. All samples shall be collected and analyzed in accordance with 40 CFR Part 136, an alternative method approved by EPA or a method approved in advance by the Virginia Department of Environmental Quality. Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of this permit, Propylene Glycol monitoring shall be suspended for Outfall 010.
- b. Total Petroleum Hydrocarbons (TPH) shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW -141 (1995), or by EPA SW-846 Method 8015C for diesel range organics, or by EPA SW-846 Method 8270D. If Method 8270D is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons.
- c. The quarterly monitoring periods shall be January 1 – March 31, April 1 – June 30, July 1 – September 30, and October 1 – December 31. The DMR shall be submitted no later than the 10th day of the month following the monitoring period (April 10, July 10, October 10 and January 10, respectively).

Outfall 011

Discharge Location: UT to Horsepen Run

Monitoring Frequency: Quarterly

Treatment: Oil-Water Separator

Discussion and/or Changes from Previous Permit:

- ➔ The monitoring frequency for this outfall has been modified from semi-annually to quarterly. This change is prompted by the implementation of representative sampling, and is not the result of non-compliance on the part of the Airport.

Outfall 011 is in a series of ten outfalls (007, 008, 009, 010, 011, 012, 013, 014, 015, and 016) located along the cargo ramp and Landmark Aviation areas. Deicing does occur within this area so there is potential for Propylene Glycol (PG) contamination. Drains are plugged during deicing events with PG being recovered by GRVs. If 100% recovery of PG is not attained, runoff may potentially discharge via Outfalls 007, 008, 009, 010, 011, 012, 013, 014, 015, and 016 to a large drainage ditch adjacent to the cargo ramp / Landmark Aviation area. Of the ten outfalls, seven are provided additional treatment through oil-water separators. A review of monitoring data submitted by the Airport indicates that PG has not been detected at Outfall 011, and that there is very little flow.

The industrial activities of concern (PG) and airport areas contributing to the storm water runoff (i.e., the location of the outfalls along the cargo ramp and Landmark Aviation areas) are substantially identical for Outfalls 007, 008, 009, 010, 011, 012, 013, 014, 015, and 016. It is staff's opinion that the discharge from these outfalls will also be substantially identical. The Airport may test the discharge from just one of the outfalls (015) and report that the data also applies to the substantially identical outfall (011). Staff believes representative sampling is adequate for these ten outfalls as the discharge ultimately reaches a newly designated in-stream monitoring location (SS003) and Horsepen Lake which is again monitored at in-stream location SS001.

Outfall 015 was selected for testing because it receives a higher flow volume than the other outfalls, thereby providing a more representative and accurate sample. It is staff's opinion that by monitoring Outfall 015 a representative value can be obtained for Outfalls 007, 008, 009, 010, 011, 012, 013, 014, and 016 since they are substantially identical.

- ➔ Under the existing permit, the Airport has monitored Dissolved Oxygen as a field parameter only. With this reissuance, the Airport shall report results of DO monitoring on the DMR for the month in which monitoring was conducted.
- ➔ Monitoring and reporting of Total Kjeldahl Nitrogen (TKN) has been added with this reissuance.
- ➔ Monitoring and reporting requirements for Propylene Glycol (PG) have been modified to report a minimum and maximum value. Monthly average reporting is no longer required.
- ➔ Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of the permit, Propylene Glycol monitoring shall be suspended for Outfall 011. It is staff's opinion that any Propylene Glycol from this outfall will be accounted for by the on-line monitoring at SS001 (Horsepen Lake).

Effluent Limitations/Monitoring Requirements: Outfall 011

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date. Discharge data from Outfall 015 may be submitted to represent Outfall 011.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Frequency^(c)</u>	<u>Sample Type</u>
Flow (MGD)	NA	NL	NL	N/A	N/A	1/3M	Estimate
pH	2	N/A	N/A	NL (S.U.)	NL (S.U.)	1/3M	Grab
Dissolved Oxygen (DO)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Conductivity	2	NL (μhoms/cm)	NL (μhoms/cm)	N/A	N/A	1/3M	Grab
Propylene Glycol ^(a)	2	N/A	NL (mg/L)	NL (mg/L)	NL (mg/L)	1/3M	Grab
Total Petroleum Hydrocarbons (TPH) ^(b)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Kjeldahl Nitrogen (TKN)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Biochemical Oxygen Demand (BOD ₅)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Chemical Oxygen Demand (COD)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Suspended Solids (TSS)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab

The basis for the limitations codes are: *MGD* = Million gallons per day.

1/3M = Once every three months in which a discharge occurs.

1. Federal Effluent Requirements *N/A* = Not applicable.
2. Best Professional Judgement *NL* = No limit; monitor and report.
3. Water Quality Standards *S.U.* = Standard units.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

- a. Sampling for Propylene Glycol shall be performed during the months of October – April. Sampling shall be conducted in accordance with current protocols established in the Airport's approved Deicing Management and Monitoring Plan and SWPPP. All field monitoring data and/or results shall be submitted with the DMR for the month in which monitoring was conducted. All samples shall be collected and analyzed in accordance with 40 CFR Part 136, an alternative method approved by EPA or a method approved in advance by the Virginia Department of Environmental Quality. Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of this permit, Propylene Glycol monitoring shall be suspended for Outfall 011.
- b. Total Petroleum Hydrocarbons (TPH) shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW -141 (1995), or by EPA SW-846 Method 8015C for diesel range organics, or by EPA SW-846 Method 8270D. If Method 8270D is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons.
- c. The quarterly monitoring periods shall be January 1 – March 31, April 1 – June 30, July 1 – September 30, and October 1 – December 31. The DMR shall be submitted no later than the 10th day of the month following the monitoring period (April 10, July 10, October 10 and January 10, respectively).

Outfall 012

Discharge Location: UT to Horsepen Run

Monitoring Frequency: Quarterly

Treatment: None

Discussion and/or Changes from Previous Permit:

- ➔ Representative sampling is being implemented with this reissuance.

Outfall 012 is in a series of ten outfalls (007, 008, 009, 010, 011, 012, 013, 014, 015, and 016) located along the cargo ramp and Landmark Aviation areas. Deicing does occur within this area so there is potential for Propylene Glycol (PG) contamination. Drains are plugged during deicing events with PG being recovered by GRVs. If 100% recovery of PG is not attained, runoff may potentially discharge via Outfalls 007, 008, 009, 010, 011, 012, 013, 014, 015, and 016 to a large drainage ditch adjacent to the cargo ramp / Landmark Aviation area. Of the ten outfalls, seven are provided additional treatment through oil-water separators. A review of monitoring data submitted by the Airport indicates that PG has not been detected at Outfall 012, and that there is very little flow.

The industrial activities of concern (PG) and airport areas contributing to the storm water runoff (i.e., the location of the outfalls along the cargo ramp and Landmark Aviation areas) are substantially identical for Outfalls 007, 008, 009, 010, 011, 012, 013, 014, 015, and 016. It is staff's opinion that the discharge from these outfalls will also be substantially identical. The Airport may test the discharge from just one of the outfalls (015) and report that the data also applies to the substantially identical outfall (008). Staff believes representative sampling is adequate for these ten outfalls as the discharge ultimately reaches a newly designated in-stream monitoring location (SS003) and Horsepen Lake which is again monitored at in-stream location SS001.

Outfall 015 was selected for testing because it receives a higher flow volume than the other outfalls, thereby providing a more representative and accurate sample. It is staff's opinion that by monitoring Outfall 015 a representative value can be obtained for Outfalls 007, 008, 009, 010, 011, 012, 013, 014, and 016 since they are substantially identical.

- ➔ Under the existing permit, the Airport has monitored Dissolved Oxygen as a field parameter only. With this reissuance, the Airport shall report results of DO monitoring on the DMR for the month in which monitoring was conducted.
- ➔ Monitoring and reporting of Total Kjeldahl Nitrogen (TKN) has been added with this reissuance.
- ➔ Monitoring and reporting requirements for Propylene Glycol (PG) have been modified to report a minimum and maximum value. Monthly average reporting is no longer required.
- ➔ Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of the permit, Propylene Glycol monitoring shall be suspended for Outfall 012. It is staff's opinion that any Propylene Glycol from this outfall will be accounted for by the on-line monitoring at SS001 (Horsepen Lake).

Effluent Limitations/Monitoring Requirements: Outfall 012

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date. Discharge data from Outfall 015 may be submitted to represent Outfall 012.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Frequency^(c)</u>	<u>Sample Type</u>
Flow (MGD)	NA	NL	NL	N/A	N/A	1/3M	Estimate
pH	2	N/A	N/A	NL (S.U.)	NL (S.U.)	1/3M	Grab
Dissolved Oxygen (DO)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Conductivity	2	NL (μhoms/cm)	NL (μhoms/cm)	N/A	N/A	1/3M	Grab
Propylene Glycol ^(a)	2	N/A	NL (mg/L)	NL (mg/L)	NL (mg/L)	1/3M	Grab
Total Petroleum Hydrocarbons (TPH) ^(b)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Kjeldahl Nitrogen (TKN)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Biochemical Oxygen Demand (BOD ₅)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Chemical Oxygen Demand (COD)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Suspended Solids (TSS)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab

The basis for the limitations codes are:

MGD = Million gallons per day.

1/3M = Once every three months in which a discharge occurs.

1. Federal Effluent Requirements

N/A = Not applicable.

2. Best Professional Judgement

NL = No limit; monitor and report.

3. Water Quality Standards

S.U. = Standard units.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

- Sampling for Propylene Glycol shall be performed during the months of October – April. Sampling shall be conducted in accordance with current protocols established in the Airport's approved Deicing Management and Monitoring Plan and SWPPP. All field monitoring data and/or results shall be submitted with the DMR for the month in which monitoring was conducted. All samples shall be collected and analyzed in accordance with 40 CFR Part 136, an alternative method approved by EPA or a method approved in advance by the Virginia Department of Environmental Quality. Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of this permit, Propylene Glycol monitoring shall be suspended for Outfall 012.
- Total Petroleum Hydrocarbons (TPH) shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW -141 (1995), or by EPA SW-846 Method 8015C for diesel range organics, or by EPA SW-846 Method 8270D. If Method 8270D is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons.
- The quarterly monitoring periods shall be January 1 – March 31, April 1 – June 30, July 1 – September 30, and October 1 – December 31. The DMR shall be submitted no later than the 10th day of the month following the monitoring period (April 10, July 10, October 10 and January 10, respectively).

Outfall 013

Discharge Location: UT to Horsepen Run

Monitoring Frequency: Quarterly

Treatment: None

Discussion and/or Changes from Previous Permit:

- ➔ Representative sampling is being implemented with this reissuance.

Outfall 013 is in a series of ten outfalls (007, 008, 009, 010, 011, 012, 013, 014, 015, and 016) located along the cargo ramp and Landmark Aviation areas. Deicing does occur within this area so there is potential for Propylene Glycol (PG) contamination. Drains are plugged during deicing events with PG being recovered by GRVs. If 100% recovery of PG is not attained, runoff may potentially discharge via Outfalls 007, 008, 009, 010, 011, 012, 013, 014, 015, and 016 to a large drainage ditch adjacent to the cargo ramp / Landmark Aviation area. Of the ten outfalls, seven are provided additional treatment through oil-water separators. A review of monitoring data submitted by the Airport indicates that PG has been detected at Outfall 013, and that there is very little flow.

The industrial activities of concern (PG) and airport areas contributing to the storm water runoff (i.e., the location of the outfalls along the cargo ramp and Landmark Aviation areas) are substantially identical for Outfalls 007, 008, 009, 010, 011, 012, 013, 014, 015, and 016. It is staff's opinion that the discharge from these outfalls will also be substantially identical. The Airport may test the discharge from just one of the outfalls (015) and report that the data also applies to the substantially identical outfall (013). Staff believes representative sampling is adequate for these ten outfalls as the discharge ultimately reaches a newly designated in-stream monitoring location (SS003) and Horsepen Lake which is again monitored at in-stream location SS001.

Outfall 015 was selected for testing because it receives a higher flow volume than the other outfalls, thereby providing a more representative and accurate sample. It is staff's opinion that by monitoring Outfall 015 a representative value can be obtained for Outfalls 007, 008, 009, 010, 011, 012, 013, 014, and 016 since they are substantially identical.

- ➔ Under the existing permit, the Airport has monitored Dissolved Oxygen as a field parameter only. With this reissuance, the Airport shall report results of DO monitoring on the DMR for the month in which monitoring was conducted.
- ➔ Monitoring and reporting of Total Kjeldahl Nitrogen (TKN) has been added with this reissuance.
- ➔ Monitoring and reporting requirements for Propylene Glycol (PG) have been modified to report a minimum and maximum value. Monthly average reporting is no longer required.
- ➔ Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of the permit, Propylene Glycol monitoring shall be suspended for Outfall 013. It is staff's opinion that any Propylene Glycol from this outfall will be accounted for by the on-line monitoring at SS001 (Horsepen Lake).

Effluent Limitations/Monitoring Requirements: Outfall 013

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date. Discharge data from Outfall 015 may be submitted to represent Outfall 013.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Frequency^(c)</u>	<u>Sample Type</u>
Flow (MGD)	NA	NL	NL	N/A	N/A	1/3M	Estimate
pH	2	N/A	N/A	NL (S.U.)	NL (S.U.)	1/3M	Grab
Dissolved Oxygen (DO)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Conductivity	2	NL (μhoms/cm)	NL (μhoms/cm)	N/A	N/A	1/3M	Grab
Propylene Glycol ^(a)	2	N/A	NL (mg/L)	NL (mg/L)	NL (mg/L)	1/3M	Grab
Total Petroleum Hydrocarbons (TPH) ^(b)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Kjeldahl Nitrogen (TKN)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Biochemical Oxygen Demand (BOD ₅)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Chemical Oxygen Demand (COD)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Suspended Solids (TSS)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab

The basis for the limitations codes are: *MGD* = Million gallons per day.

1/3M = Once every three months in which a discharge occurs.

1. Federal Effluent Requirements *N/A* = Not applicable.
2. Best Professional Judgement *NL* = No limit; monitor and report.
3. Water Quality Standards *S.U.* = Standard units.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

- a. Sampling for Propylene Glycol shall be performed during the months of October – April. Sampling shall be conducted in accordance with current protocols established in the Airport's approved Deicing Management and Monitoring Plan and SWPPP. All field monitoring data and/or results shall be submitted with the DMR for the month in which monitoring was conducted. All samples shall be collected and analyzed in accordance with 40 CFR Part 136, an alternative method approved by EPA or a method approved in advance by the Virginia Department of Environmental Quality. Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of this permit, Propylene Glycol monitoring shall be suspended for Outfall 013.
- b. Total Petroleum Hydrocarbons (TPH) shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW -141 (1995), or by EPA SW-846 Method 8015C for diesel range organics, or by EPA SW-846 Method 8270D. If Method 8270D is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons.
- c. The quarterly monitoring periods shall be January 1 – March 31, April 1 – June 30, July 1 – September 30, and October 1 – December 31. The DMR shall be submitted no later than the 10th day of the month following the monitoring period (April 10, July 10, October 10 and January 10, respectively).

Outfall 014

Discharge Location: UT to Horsepen Run

Monitoring Frequency: Quarterly

Treatment: Oil-Water Separator

Discussion and/or Changes from Previous Permit:

- ➔ The monitoring frequency for this outfall has been modified from semi-annually to quarterly. This change is prompted by the implementation of representative sampling, and is not the result of non-compliance on the part of the Airport.

Outfall 014 is in a series of ten outfalls (007, 008, 009, 010, 011, 012, 013, 014, 015, and 016) located along the cargo ramp and Landmark Aviation areas. Deicing does occur within this area so there is potential for Propylene Glycol (PG) contamination. Drains are plugged during deicing events with PG being recovered by GRVs. If 100% recovery of PG is not attained, runoff may potentially discharge via Outfalls 007, 008, 009, 010, 011, 012, 013, 014, 015, and 016 to a large drainage ditch adjacent to the cargo ramp / Landmark Aviation area. Of the ten outfalls, seven are provided additional treatment through oil-water separators. A review of monitoring data submitted by the Airport indicates that PG has not been detected at Outfall 014, and that there is very little flow.

The industrial activities of concern (PG) and airport areas contributing to the storm water runoff (i.e., the location of the outfalls along the cargo ramp and Landmark Aviation areas) are substantially identical for Outfalls 007, 008, 009, 010, 011, 012, 013, 014, 015, and 016. It is staff's opinion that the discharge from these outfalls will also be substantially identical. The Airport may test the discharge from just one of the outfalls (015) and report that the data also applies to the substantially identical outfall (014). Staff believes representative sampling is adequate for these ten outfalls as the discharge ultimately reaches a newly designated in-stream monitoring location (SS003) and Horsepen Lake which is again monitored at in-stream location SS001.

Outfall 015 was selected for testing because it receives a higher flow volume than the other outfalls, thereby providing a more representative and accurate sample. It is staff's opinion that by monitoring Outfall 015 a representative value can be obtained for Outfalls 007, 008, 009, 010, 011, 012, 013, 014, and 016 since they are substantially identical.

- ➔ Under the existing permit, the Airport has monitored Dissolved Oxygen as a field parameter only. With this reissuance, the Airport shall report results of DO monitoring on the DMR for the month in which monitoring was conducted.
- ➔ Monitoring and reporting of Total Kjeldahl Nitrogen (TKN) has been added with this reissuance.
- ➔ Monitoring and reporting requirements for Propylene Glycol (PG) have been modified to report a minimum and maximum value. Monthly average reporting is no longer required.
- ➔ Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of the permit, Propylene Glycol monitoring shall be suspended for Outfall 014. It is staff's opinion that any Propylene Glycol from this outfall will be accounted for by the on-line monitoring at SS001 (Horsepen Lake).

Effluent Limitations/Monitoring Requirements: Outfall 014

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date. Discharge data from Outfall 015 may be submitted to represent Outfall 014.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Frequency^(c)</u>	<u>Sample Type</u>
Flow (MGD)	NA	NL	NL	N/A	N/A	1/3M	Estimate
pH	2	N/A	N/A	NL (S.U.)	NL (S.U.)	1/3M	Grab
Dissolved Oxygen (DO)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Conductivity	2	NL (µhoms/cm)	NL (µhoms/cm)	N/A	N/A	1/3M	Grab
Propylene Glycol ^(a)	2	N/A	NL (mg/L)	NL (mg/L)	NL (mg/L)	1/3M	Grab
Total Petroleum Hydrocarbons (TPH) ^(b)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Kjeldahl Nitrogen (TKN)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Biochemical Oxygen Demand (BOD ₅)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Chemical Oxygen Demand (COD)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Suspended Solids (TSS)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab

The basis for the limitations codes are:

MGD = Million gallons per day.

1/3M = Once every three months in which a discharge occurs.

1. Federal Effluent Requirements

N/A = Not applicable.

2. Best Professional Judgement

NL = No limit; monitor and report.

3. Water Quality Standards

S.U. = Standard units.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

- Sampling for Propylene Glycol shall be performed during the months of October – April. Sampling shall be conducted in accordance with current protocols established in the Airport's approved Deicing Management and Monitoring Plan and SWPPP. All field monitoring data and/or results shall be submitted with the DMR for the month in which monitoring was conducted. All samples shall be collected and analyzed in accordance with 40 CFR Part 136, an alternative method approved by EPA or a method approved in advance by the Virginia Department of Environmental Quality. Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of this permit, Propylene Glycol monitoring shall be suspended for Outfall 014.
- Total Petroleum Hydrocarbons (TPH) shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW -141 (1995), or by EPA SW -846 Method 8015C for diesel range organics, or by EPA SW -846 Method 8270D. If Method 8270D is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons.
- The quarterly monitoring periods shall be January 1 – March 31, April 1 – June 30, July 1 – September 30, and October 1 – December 31. The DMR shall be submitted no later than the 10th day of the month following the monitoring period (April 10, July 10, October 10 and January 10, respectively).

Outfall 015

Discharge Location: UT to Horsepen Run

Monitoring Frequency: Quarterly

Treatment: Oil-Water Separator

Discussion and/or Changes from Previous Permit:

- The monitoring frequency for this outfall has been modified from monthly to quarterly. This change is prompted by the implementation of representative sampling.

Outfall 015 is second in a series of ten outfalls (007, 008, 009, 010, 011, 012, 013, 014, 015, and 016) located along the cargo ramp and Landmark Aviation areas. Deicing does occur within this area so there is potential for Propylene Glycol (PG) contamination. Drains are plugged during deicing events with PG being recovered by GRVs. If 100% recovery of PG is not attained, runoff may potentially discharge via Outfalls 007, 008, 009, 010, 011, 012, 013, 014, 015, and 016 to a large drainage ditch adjacent to the cargo ramp / Landmark Aviation area. Of the ten outfalls, seven are provided additional treatment through oil-water separators. A review of monitoring data submitted by the Airport indicates that PG has been detected at Outfall 015, and that there is significant flow.

The industrial activities of concern (PG) and airport areas contributing to the storm water runoff (i.e., the location of the outfalls along the cargo ramp and Landmark Aviation areas) are substantially identical for Outfalls 007, 008, 009, 010, 011, 012, 013, 014, 015, and 016. It is staff's opinion that the discharge from these outfalls will also be substantially identical. The Airport may test the discharge from just one of the outfalls (015) and report that the data also applies to the substantially identical outfalls (007, 008, 009, 010, 011, 012, 013, 014, and 016). Staff believes representative sampling is adequate for these ten outfalls as the discharge ultimately reaches a newly designated in-stream monitoring location (SS003) and Horsepen Lake which is again monitored at in-stream location SS001.

Outfall 015 was selected for testing because it receives a higher flow volume than the other outfalls, thereby providing a more representative and accurate sample. It is staff's opinion that by monitoring Outfall 015 a representative value can be obtained for Outfalls 007, 008, 009, 010, 011, 012, 013, 014, and 016 since they are substantially identical.

- Under the existing permit, the Airport has monitored Dissolved Oxygen as a field parameter only. With this reissuance, the Airport shall report results of DO monitoring on the DMR for the month in which monitoring was conducted.
- Monitoring and reporting of Total Kjeldahl Nitrogen (TKN) has been added with this reissuance.
- Monitoring and reporting requirements for Propylene Glycol (PG) have been modified to report a minimum and maximum value. Monthly average reporting is no longer required.
- Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of the permit, Propylene Glycol monitoring shall be suspended for Outfall 015. It is staff's opinion that any Propylene Glycol from this outfall will be accounted for by the on-line monitoring at SS001 (Horsepen Lake).

Effluent Limitations/Monitoring Requirements: Outfall 015

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date. Discharge data from Outfall 015 may be submitted to represent Outfall 007, 008, 009, 010, 011, 012, 013, 014, and 016.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Daily Maximum	Minimum	Maximum	Frequency ^(c)	Sample Type
Flow (MGD)	NA	NL	NL	N/A	N/A	1/3M	Estimate
pH	2	N/A	N/A	NL (S.U.)	NL (S.U.)	1/3M	Grab
Dissolved Oxygen (DO)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Conductivity	2	NL (μhoms/cm)	NL (μhoms/cm)	N/A	N/A	1/3M	Grab
Propylene Glycol ^(a)	2	N/A	NL (mg/L)	NL (mg/L)	NL (mg/L)	1/3M	Grab
Total Petroleum Hydrocarbons (TPH) ^(b)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Kjeldahl Nitrogen (TKN)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Biochemical Oxygen Demand (BOD ₅)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Chemical Oxygen Demand (COD)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Suspended Solids (TSS)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab

The basis for the limitations codes are:

MGD = Million gallons per day.

1/3M = Once every three months in which a discharge occurs.

1. Federal Effluent Requirements *N/A* = Not applicable.
2. Best Professional Judgement *NL* = No limit; monitor and report.
3. Water Quality Standards *S.U.* = Standard units.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

- a. Sampling for Propylene Glycol shall be performed during the months of October – April. Sampling shall be conducted in accordance with current protocols established in the Airport's approved Deicing Management and Monitoring Plan and SWPPP. All field monitoring data and/or results shall be submitted with the DMR for the month in which monitoring was conducted. All samples shall be collected and analyzed in accordance with 40 CFR Part 136, an alternative method approved by EPA or a method approved in advance by the Virginia Department of Environmental Quality. Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of this permit, Propylene Glycol monitoring shall be suspended for Outfall 015.
- b. Total Petroleum Hydrocarbons (TPH) shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW-141 (1995), or by EPA SW-846 Method 8015C for diesel range organics, or by EPA SW-846 Method 8270D. If Method 8270D is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons.
- c. The quarterly monitoring periods shall be January 1 – March 31, April 1 – June 30, July 1 – September 30, and October 1 – December 31. The DMR shall be submitted no later than the 10th day of the month following the monitoring period (April 10, July 10, October 10 and January 10, respectively).

Outfall 016

Discharge Location: UT to Horsepen Run

Monitoring Frequency: Quarterly

Treatment: Oil-Water Separator

Discussion and/or Changes from Previous Permit:

- Representative sampling is being implemented with this reissuance.

Outfall 016 is first in a series of ten outfalls (007, 008, 009, 010, 011, 012, 013, 014, 015, and 016) located along the cargo ramp and Landmark Aviation areas. Deicing does occur within this area so there is potential for Propylene Glycol (PG) contamination. Drains are plugged during deicing events with PG being recovered by GRVs. If 100% recovery of PG is not attained, runoff may potentially discharge via Outfalls 007, 008, 009, 010, 011, 012, 013, 014, 015, and 016 to a large drainage ditch adjacent to the cargo ramp / Landmark Aviation area. Of the ten outfalls, seven are provided additional treatment through oil-water separators. A review of monitoring data submitted by the Airport indicates that PG has been detected at Outfall 016, and that there is very little flow.

The industrial activities of concern (PG) and airport areas contributing to the storm water runoff (i.e., the location of the outfalls along the cargo ramp and Landmark Aviation areas) are substantially identical for Outfalls 007, 008, 009, 010, 011, 012, 013, 014, 015, and 016. It is staff's opinion that the discharge from these outfalls will also be substantially identical. The Airport may test the discharge from just one of the outfalls (015) and report that the data also applies to the substantially identical outfall (016). Staff believes representative sampling is adequate for these ten outfalls as the discharge ultimately reaches a newly designated in-stream monitoring location (SS003) and Horsepen Lake which is again monitored at in-stream location SS001.

Outfall 015 was selected for testing because it receives a higher flow volume than the other outfalls, thereby providing a more representative and accurate sample. It is staff's opinion that by monitoring Outfall 015 a representative value can be obtained for Outfalls 007, 008, 009, 010, 011, 012, 013, 014, and 016 since they are substantially identical.

- Under the existing permit, the Airport has monitored Dissolved Oxygen as a field parameter only. With this reissuance, the Airport shall report results of DO monitoring on the DMR for the month in which monitoring was conducted.
- Monitoring and reporting of Total Kjeldahl Nitrogen (TKN) has been added with this reissuance.
- Monitoring and reporting requirements for Propylene Glycol (PG) have been modified to report a minimum and maximum value. Monthly average reporting is no longer required.
- Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of the permit, Propylene Glycol monitoring shall be suspended for Outfall 016. It is staff's opinion that any Propylene Glycol from this outfall will be accounted for by the on-line monitoring at SS001 (Horsepen Lake).

Effluent Limitations/Monitoring Requirements: Outfall 016

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date. Discharge data from Outfall 015 may be submitted to represent Outfall 016.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Frequency^(c)</u>	<u>Sample Type</u>
Flow (MGD)	NA	NL	NL	N/A	N/A	1/3M	Estimate
pH	2	N/A	N/A	NL (S.U.)	NL (S.U.)	1/3M	Grab
Dissolved Oxygen (DO)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Conductivity	2	NL (μhoms/cm)	NL (μhoms/cm)	N/A	N/A	1/3M	Grab
Propylene Glycol ^(a)	2	N/A	NL (mg/L)	NL (mg/L)	NL (mg/L)	1/3M	Grab
Total Petroleum Hydrocarbons (TPH) ^(b)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Kjeldahl Nitrogen (TKN)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Biochemical Oxygen Demand (BOD ₅)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Chemical Oxygen Demand (COD)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Suspended Solids (TSS)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab

The basis for the limitations codes are: *MGD* = Million gallons per day. *1/3M* = Once every three months in which a discharge occurs.

1. Federal Effluent Requirements *N/A* = Not applicable.
2. Best Professional Judgement *NL* = No limit; monitor and report.
3. Water Quality Standards *S.U.* = Standard units.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

- a. Sampling for Propylene Glycol shall be performed during the months of October – April. Sampling shall be conducted in accordance with current protocols established in the Airport's approved Deicing Management and Monitoring Plan and SWPPP. All field monitoring data and/or results shall be submitted with the DMR for the month in which monitoring was conducted. All samples shall be collected and analyzed in accordance with 40 CFR Part 136, an alternative method approved by EPA or a method approved in advance by the Virginia Department of Environmental Quality. Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of this permit, Propylene Glycol monitoring shall be suspended for Outfall 016.
- b. Total Petroleum Hydrocarbons (TPH) shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW -141 (1995), or by EPA SW-846 Method 8015C for diesel range organics, or by EPA SW-846 Method 8270D. If Method 8270D is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons.
- c. The quarterly monitoring periods shall be January 1 – March 31, April 1 – June 30, July 1 – September 30, and October 1 – December 31. The DMR shall be submitted no later than the 10th day of the month following the monitoring period (April 10, July 10, October 10 and January 10, respectively).

Outfall 017

Discharge Location: UT to Horsepen Run

Monitoring Frequency: Annual

Treatment: Oil-Water Separator

Discussion and/or Changes from Previous Permit:

- ➔ Deicing and/or anti-icing activities do not take place within the drainage area for this outfall. As such, conductivity monitoring is being discontinued with this reissuance. Conductivity is most relevant with Propylene Glycol use due to its high oxygen demand.
- ➔ Maintenance in this area is carried out within the hangar. It is staff's opinion that semi-annual monitoring is adequate based on the level of activity.

Effluent Limitations/Monitoring Requirements: Outfall 017

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Frequency^(b)</u>	<u>Sample Type</u>
Flow (MGD)	NA	NL	NL	N/A	N/A	1/YR	Estimate
pH	2	N/A	N/A	NL (S.U.)	NL (S.U.)	1/YR	Grab
Total Petroleum Hydrocarbons (TPH) ^(a)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/YR	Grab
Total Suspended Solids (TSS)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/YR	Grab

The basis for the limitations codes are:

MGD = Million gallons per day.

1/YR = Once every twelve months in which a discharge occurs.

1. Federal Effluent Requirements *N/A* = Not applicable.
2. Best Professional Judgement *NL* = No limit; monitor and report.
3. Water Quality Standards *S.U.* = Standard units.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

- a. Total Petroleum Hydrocarbons (TPH) shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW -141 (1995), or by EPA SW-846 Method 8015C for diesel range organics, or by EPA SW-846 Method 8270D. If Method 8270D is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons..
- b. The monitoring period shall be January 1 – December 31. The DMR shall be submitted no later than the 10th day of the month following the monitoring period (January 10).

Outfall 018

Discharge Location: UT to Horsepen Run

Monitoring Frequency: Annual

Treatment: None

Discussion and/or Changes from Previous Permit:

- ➔ The monitoring frequency for this outfall has been modified from semi-annually to annual. This change is prompted based on the level of compliance and to provide consistency with the VPDES General Permit for Car Wash Activities.
- ➔ Deicing and/or anti-icing activities do not take place within the drainage area for this outfall. As such, conductivity monitoring is being discontinued with this reissuance. Conductivity is most relevant with Propylene Glycol use due to its high oxygen demand.

Effluent Limitations/Monitoring Requirements: Outfall 018

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Daily Maximum	Minimum	Maximum	Frequency ^(b)	Sample Type
Flow (MGD)	NA	NL	NL	N/A	N/A	1/YR	Estimate
pH	2	N/A	N/A	NL (S.U.)	NL (S.U.)	1/YR	Grab
Total Petroleum Hydrocarbons (TPH) ^(a)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/YR	Grab
Total Suspended Solids (TSS)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/YR	Grab

The basis for the limitations codes are: *MGD* = Million gallons per day.

1/YR = Once every twelve months in which a discharge occurs.

1. Federal Effluent Requirements *N/A* = Not applicable.
2. Best Professional Judgement *NL* = No limit; monitor and report.
3. Water Quality Standards *S.U.* = Standard units.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

- a. Total Petroleum Hydrocarbons (TPH) shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW -141 (1995), or by EPA SW-846 Method 8015C for diesel range organics, or by EPA SW-846 Method 8270D. If Method 8270D is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons.
- b. The annual monitoring period shall be January 1 –December 31. The DMR shall be submitted no later than the 10th day of the month following the monitoring period (January 10).

Outfall 019

Discharge Location: UT to Horsepen Run

Monitoring Frequency: Quarterly

Treatment: None

Discussion and/or Changes from Previous Permit:

- ➔ Secondary deicing and/or anti-icing may be conducted within the drainage area for this outfall on a limited basis. As such, there is potential for Propylene Glycol (PG) contamination. Quarterly monitoring shall be carried forward with this reissuance.
- ➔ Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of the permit, Propylene Glycol monitoring shall be suspended for Outfall 019. It is staff's opinion that any Propylene Glycol from this outfall will be accounted for by the on-line monitoring at SS001 (Horsepen Lake).

Effluent Limitations/Monitoring Requirements: Outfall 019

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Daily Maximum	Minimum	Maximum	Frequency ^(c)	Sample Type
Flow (MGD)	NA	NL	NL	N/A	N/A	1/3M	Estimate
pH	2	N/A	N/A	NL (S.U.)	NL (S.U.)	1/3M	Grab
Dissolved Oxygen (DO)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Conductivity	2	NL (µhoms/cm)	NL (µhoms/cm)	N/A	N/A	1/3M	Grab
Propylene Glycol ^(a)	2	N/A	NL (mg/L)	NL (mg/L)	NL (mg/L)	1/3M	Grab
Total Petroleum Hydrocarbons (TPH) ^(b)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Kjeldahl Nitrogen (TKN)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Biochemical Oxygen Demand (BOD ₅)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Chemical Oxygen Demand (COD)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Suspended Solids (TSS)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab

The basis for the limitations codes are: *MGD* = Million gallons per day. *1/3M* = Once every three months in which a discharge occurs.

- 1. Federal Effluent Requirements *N/A* = Not applicable.
- 2. Best Professional Judgement *NL* = No limit; monitor and report.
- 3. Water Quality Standards *S.U.* = Standard units.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

- a. Sampling for Propylene Glycol shall be performed during the months of October – April. Sampling shall be conducted in accordance with current protocols established in the Airport's approved Deicing Management and Monitoring Plan and SWPPP. All field monitoring data and/or results shall be submitted with the DMR for the month in which monitoring was conducted. All samples shall be collected and analyzed in accordance with 40 CFR Part 136, an alternative method approved by EPA or a method approved in advance by the Virginia Department of Environmental Quality. Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of this permit, Propylene Glycol monitoring shall be suspended for Outfall 019.
- b. Total Petroleum Hydrocarbons (TPH) shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW-141 (1995), or by EPA SW-846 Method 8015C for diesel range organics, or by EPA SW-846 Method 8270D. If Method 8270D is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons.
- c. The quarterly monitoring periods shall be January 1 – March 31, April 1 – June 30, July 1 – September 30, and October 1 – December 31. The DMR shall be submitted no later than the 10th day of the month following the monitoring period (April 10, July 10, October 10 and January 10, respectively).

Outfall 020

Discharge Location: UT to Horsepen Run

Monitoring Frequency: Monthly

Treatment: Oil-Water Separator, Detention Pond, Sluice Gates

Discussion and/or Changes from Previous Permit:

- ➔ The monitoring frequency for this outfall has been modified from semi-annually to monthly per the request of the Airport. This change is requested to allow for more adequate visual inspections by Airport staff and Air BP staff.
- ➔ The storm water discharge from Outfall 020 is associated with fuel storage areas. DEQ guidance indicates effluent limitations are required for these types of discharges.
- ➔ Deicing and/or anti-icing activities do not take place within the drainage area for this outfall. As such, conductivity monitoring is being discontinued with this reissuance. Conductivity is most relevant with Propylene Glycol use due to its high oxygen demand.

Effluent Limitations/Monitoring Requirements: Outfall 020

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Frequency</u>	<u>Sample Type</u>
Flow (MGD)	NA	NL	NL	N/A	N/A	1/M	Estimate
pH	2,3	N/A	N/A	6.0 S.U.	9.0 S.U.	1/M	Grab
Total Petroleum Hydrocarbons (TPH) ^(a)	2,3	15 mg/L	30 mg/L	N/A	N/A	1/M	Grab
Total Suspended Solids (TSS)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab

The basis for the limitations codes are: *MGD* = Million gallons per day.

1/M = Once per month in which a discharge occurs.

1. Federal Effluent Requirements *N/A* = Not applicable.
2. Best Professional Judgement *NL* = No limit; monitor and report.
3. Water Quality Standards *S.U.* = Standard units.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

- a. Total Petroleum Hydrocarbons (TPH) shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW -141 (1995), or by EPA SW-846 Method 8015C for diesel range organics, or by EPA SW-846 Method 8270D. If Method 8270D is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons.

Outfall 021

Discharge Location: UT to Horsepen Run

Monitoring Frequency: Monthly

Treatment: Oil-Water Separator

Discussion and/or Changes from Previous Permit:

- ➔ Due to construction activities at the Airport, the physical location of Outfall 021 has been significantly altered from that of the previous reissuance. However, the industrial activities of concern and airport areas contributing to the storm water runoff have not changed as a result of the re-location.
- ➔ The monitoring frequency for this outfall has been modified from semi-annually to monthly per the request of the Airport. This change is requested to allow for more adequate visual inspections by Airport staff and Air BP staff.
- ➔ The storm water discharge from Outfall 021 is associated with fuel storage areas. DEQ guidance indicates effluent limitations are required for these types of discharges.
- ➔ Deicing and/or anti-icing activities do not take place within the drainage area for this outfall. As such, conductivity monitoring and COD monitoring is being discontinued with this reissuance. Conductivity and COD are most relevant with Propylene Glycol use due to its high oxygen demand.
- ➔ Propylene Glycol is no longer stored within this area. As such, Propylene Glycol monitoring is being discontinued with this reissuance.

Effluent Limitations/Monitoring Requirements: Outfall 021

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Frequency</u>	<u>Sample Type</u>
Flow (MGD)	NA	NL	NL	N/A	N/A	1/M	Estimate
pH	2,3	N/A	N/A	6.0 S.U.	9.0 S.U.	1/M	Grab
Total Petroleum Hydrocarbons (TPH) ^(a)	2,3	15 mg/L	30 mg/L	N/A	N/A	1/M	Grab
Total Suspended Solids (TSS)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab

The basis for the limitations codes are: *MGD* = Million gallons per day.

1/M = Once per month in which a discharge occurs.

1. Federal Effluent Requirements *N/A* = Not applicable.
2. Best Professional Judgement *NL* = No limit; monitor and report.
3. Water Quality Standards *S.U.* = Standard units.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

- a. Total Petroleum Hydrocarbons (TPH) shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW -141 (1995), or by EPA SW-846 Method 8015C for diesel range organics, or by EPA SW-846 Method 8270D. If Method 8270D is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons.

Outfall 022

Discharge Location: UT to Cub Run

Monitoring Frequency: Quarterly

Treatment: None

Discussion and/or Changes from Previous Permit:

- ➔ Representative sampling is being implemented with this reissuance.

Outfall 022 is one of three non-application area outfalls (022, 023, and 024) located along Runway 1R. It is estimated that approximately 25% of the Propylene Glycol (PG) that is applied to an aircraft shears off during takeoff. Due to the location of this outfall along the runway, it is likely that the vast majority of PG has already dissipated from the aircraft and has been accounted for via sampling at Outfall 019. A review of monitoring data submitted by the Airport indicates that PG has not been detected at Outfall 022, and that there is very little flow.

The industrial activities of concern (PG shearing) and airport areas contributing to the storm water runoff (i.e., the location of the outfalls along Runway 1R) are substantially identical for Outfalls 022, 023, and 024, and it is staff's opinion that the discharge from these outfalls will also be substantially identical. The Airport may test the discharge from just one of the outfalls (022) and report that the data also applies to the substantially identical outfall (023 and 024). Staff believes representative sampling is adequate for these three outfalls as the discharge ultimately reaches Cub Run which is again monitored at in-stream location SS002.

Outfall 022 was selected for testing because of its location. Access to Outfall 023 and Outfall 024 is limited and considered dangerous for Airport staff, consultants, and DEQ staff conducting compliance inspections. Because of shearing, less PG enters the storm water drainage system as aircraft reach Outfalls 022, 023, and 024 during takeoff. As such, a gradual reduction in the concentrations of the parameters being monitored is expected from Outfall 022 to Outfall 023 and again from Outfall 023 to Outfall 024. It is staff's opinion that by monitoring Outfall 022 a representative value can be obtained for Outfall 023, and Outfall 024 since they are substantially identical.

- ➔ Under the existing permit, the Airport has monitored Dissolved Oxygen as a field parameter only. With this reissuance, the Airport shall report results of DO monitoring on the DMR for the month in which monitoring was conducted.
- ➔ Monitoring and reporting of Total Kjeldahl Nitrogen (TKN) has been added with this reissuance.
- ➔ Monitoring and reporting requirements for Propylene Glycol (PG) have been modified to report a minimum and maximum value. Monthly average reporting is no longer required.
- ➔ Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of the permit, Propylene Glycol monitoring for Outfall 022 shall remain as specified below. Propylene Glycol from this outfall will not be accounted for by the on-line monitoring at SS001 (Horsepen Lake).

Effluent Limitations/Monitoring Requirements: Outfall 022

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date. Discharge data from Outfall 022 may be submitted to represent Outfall 023 and Outfall 024.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Frequency^(c)</u>	<u>Sample Type</u>
Flow (MGD)	NA	NL	NL	N/A	N/A	1/3M	Estimate
pH	2	N/A	N/A	NL (S.U.)	NL (S.U.)	1/3M	Grab
Dissolved Oxygen (DO)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Conductivity	2	NL (μhoms/cm)	NL (μhoms/cm)	N/A	N/A	1/3M	Grab
Propylene Glycol ^(a)	2	N/A	NL (mg/L)	NL (mg/L)	NL (mg/L)	1/3M	Grab
Total Petroleum Hydrocarbons (TPH) ^(b)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Kjeldahl Nitrogen (TKN)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Biochemical Oxygen Demand (BOD ₅)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Chemical Oxygen Demand (COD)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Suspended Solids (TSS)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab

The basis for the limitations codes are: *MGD* = Million gallons per day. *1/3M* = Once every three months in which a discharge occurs.

1. Federal Effluent Requirements *N/A* = Not applicable.
2. Best Professional Judgement *NL* = No limit; monitor and report.
3. Water Quality Standards *S.U.* = Standard units.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

- a. Sampling for Propylene Glycol shall be performed during the months of October – April. Sampling shall be conducted in accordance with current protocols established in the Airport's approved Deicing Management and Monitoring Plan and SWPPP. All field monitoring data and/or results shall be submitted with the DMR for the month in which monitoring was conducted. All samples shall be collected and analyzed in accordance with 40 CFR Part 136, an alternative method approved by EPA or a method approved in advance by the Virginia Department of Environmental Quality.
- b. Total Petroleum Hydrocarbons (TPH) shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW -141 (1995), or by EPA SW-846 Method 8015C for diesel range organics, or by EPA SW-846 Method 8270D. If Method 8270D is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons.
- c. The quarterly monitoring periods shall be January 1 – March 31, April 1 – June 30, July 1 – September 30, and October 1 – December 31. The DMR shall be submitted no later than the 10th day of the month following the monitoring period (April 10, July 10, October 10 and January 10, respectively).

Outfall 023

Discharge Location: UT to Cub Run

Monitoring Frequency: Quarterly

Treatment: None

Discussion and/or Changes from Previous Permit:

- ➔ Representative sampling is being implemented with this reissuance.

Outfall 023 is one of three non-application area outfalls (022, 023, and 024) located along Runway 1R. It is estimated that approximately 25% of the Propylene Glycol (PG) that is applied to an aircraft shears off during takeoff. Due to the location of this outfall along the runway, it is likely that the vast majority of PG has already dissipated from the aircraft and has been accounted for via sampling at Outfall 019. A review of monitoring data submitted by the Airport indicates that PG has not been detected at Outfall 023, and that there is very little flow.

The industrial activities of concern (PG shearing) and airport areas contributing to the storm water runoff (i.e., the location of the outfalls along Runway 1R) are substantially identical for Outfalls 022, 023, and 024, and it is staff's opinion that the discharge from these outfalls will also be substantially identical. The Airport may test the discharge from just one of the outfalls (022) and report that the data also applies to the substantially identical outfall (023 and 024). Staff believes representative sampling is adequate for these three outfalls as the discharge ultimately reaches Cub Run which is again monitored at in-stream location SS002.

Outfall 022 was selected for testing because of its location. Access to Outfall 023 and Outfall 024 is limited and considered dangerous for Airport staff, consultants, and DEQ staff conducting compliance inspections. Because of shearing, less PG enters the storm water drainage system as aircraft reach Outfalls 022, 023, and 024 during takeoff. As such, a gradual reduction in the concentrations of the parameters being monitored is expected from Outfall 022 to Outfall 023 and again from Outfall 023 to Outfall 024. It is staff's opinion that by monitoring Outfall 022 a representative value can be obtained for Outfall 023 and Outfall 024 since they are substantially identical.

- ➔ Under the existing permit, the Airport has monitored Dissolved Oxygen as a field parameter only. With this reissuance, the Airport shall report results of DO monitoring on the DMR for the month in which monitoring was conducted.
- ➔ Monitoring and reporting of Total Kjeldahl Nitrogen (TKN) has been added with this reissuance.
- ➔ Monitoring and reporting requirements for Propylene Glycol (PG) have been modified to report a minimum and maximum value. Monthly average reporting is no longer required.
- ➔ Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of the permit, Propylene Glycol monitoring for Outfall 023 shall remain as specified below. Propylene Glycol from this outfall will not be accounted for by the on-line monitoring at SS001 (Horsepen Lake).

Effluent Limitations/Monitoring Requirements: Outfall 023

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date. Discharge data from Outfall 022 may be submitted to represent Outfall 023.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Frequency^(c)</u>	<u>Sample Type</u>
Flow (MGD)	NA	NL	NL	N/A	N/A	1/3M	Estimate
pH	2	N/A	N/A	NL (S.U.)	NL (S.U.)	1/3M	Grab
Dissolved Oxygen (DO)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Conductivity	2	NL (μhoms/cm)	NL (μhoms/cm)	N/A	N/A	1/3M	Grab
Propylene Glycol ^(a)	2	N/A	NL (mg/L)	NL (mg/L)	NL (mg/L)	1/3M	Grab
Total Petroleum Hydrocarbons (TPH) ^(b)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Kjeldahl Nitrogen (TKN)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Biochemical Oxygen Demand (BOD ₅)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Chemical Oxygen Demand (COD)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Suspended Solids (TSS)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab

The basis for the limitations codes are: *MGD* = Million gallons per day.

1/3M = Once every three months in which a discharge occurs.

1. Federal Effluent Requirements *N/A* = Not applicable.
2. Best Professional Judgement *NL* = No limit; monitor and report.
3. Water Quality Standards *S.U.* = Standard units.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

- a. Sampling for Propylene Glycol shall be performed during the months of October – April. Sampling shall be conducted in accordance with current protocols established in the Airport's approved Deicing Management and Monitoring Plan and SWPPP. All field monitoring data and/or results shall be submitted with the DMR for the month in which monitoring was conducted. All samples shall be collected and analyzed in accordance with 40 CFR Part 136, an alternative method approved by EPA or a method approved in advance by the Virginia Department of Environmental Quality.
- b. Total Petroleum Hydrocarbons (TPH) shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW -141 (1995), or by EPA SW-846 Method 8015C for diesel range organics, or by EPA SW-846 Method 8270D. If Method 8270D is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons.
- c. The quarterly monitoring periods shall be January 1 – March 31, April 1 – June 30, July 1 – September 30, and October 1 – December 31. The DMR shall be submitted no later than the 10th day of the month following the monitoring period (April 10, July 10, October 10 and January 10, respectively).

Outfall 024

Discharge Location: UT to Cub Run

Monitoring Frequency: Quarterly

Treatment: None

Discussion and/or Changes from Previous Permit:

- ➔ Representative sampling is being implemented with this reissuance.

Outfall 024 is one of three non-application area outfalls (022, 023, and 024) located along Runway 1R. It is estimated that approximately 25% of the Propylene Glycol (PG) that is applied to an aircraft shears off during takeoff. Due to the location of this outfall along the runway, it is likely that the vast majority of PG has already dissipated from the aircraft and has been accounted for via sampling at Outfall 019. A review of monitoring data submitted by the Airport indicates that PG has not been detected at Outfall 024, and that there is very little flow.

The industrial activities of concern (PG shearing) and airport areas contributing to the storm water runoff (i.e., the location of the outfalls along Runway 1R) are substantially identical for Outfalls 022, 023, and 024, and it is staff's opinion that the discharge from these outfalls will also be substantially identical. The Airport may test the discharge from just one of the outfalls (022) and report that the data also applies to the substantially identical outfall (023 and 024). Staff believes representative sampling is adequate for these three outfalls as the discharge ultimately reaches Cub Run which is again monitored at in-stream location SS002.

Outfall 022 was selected for testing because of its location. Access to Outfall 023 and Outfall 024 is limited and considered dangerous for Airport staff, consultants, and DEQ staff conducting compliance inspections. Because of shearing, less PG enters the storm water drainage system as aircraft reach Outfalls 022, 023, and 024 during takeoff. As such, a gradual reduction in the concentrations of the parameters being monitored is expected from Outfall 022 to Outfall 023 and again from Outfall 023 to Outfall 024. It is staff's opinion that by monitoring Outfall 022 a representative value can be obtained for Outfall 023 and Outfall 024 since they are substantially identical.

- ➔ Under the existing permit, the Airport has monitored Dissolved Oxygen as a field parameter only. With this reissuance, the Airport shall report results of DO monitoring on the DMR for the month in which monitoring was conducted.
- ➔ Monitoring and reporting of Total Kjeldahl Nitrogen (TKN) has been added with this reissuance.
- ➔ Monitoring and reporting requirements for Propylene Glycol (PG) have been modified to report a minimum and maximum value. Monthly average reporting is no longer required.
- ➔ Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of the permit, Propylene Glycol monitoring for Outfall 024 shall remain as specified below. Propylene Glycol from this outfall will not be accounted for by the on-line monitoring at SS001 (Horsepen Lake).

Effluent Limitations/Monitoring Requirements: Outfall 024

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date. Discharge data from Outfall 022 may be submitted to represent Outfall 024.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Frequency^(c)</u>	<u>Sample Type</u>
Flow (MGD)	NA	NL	NL	N/A	N/A	1/3M	Estimate
pH	2	N/A	N/A	NL (S.U.)	NL (S.U.)	1/3M	Grab
Dissolved Oxygen (DO)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Conductivity	2	NL (μhoms/cm)	NL (μhoms/cm)	N/A	N/A	1/3M	Grab
Propylene Glycol ^(a)	2	N/A	NL (mg/L)	NL (mg/L)	NL (mg/L)	1/3M	Grab
Total Petroleum Hydrocarbons (TPH) ^(b)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Kjeldahl Nitrogen (TKN)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Biochemical Oxygen Demand (BOD ₅)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Chemical Oxygen Demand (COD)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Suspended Solids (TSS)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab

The basis for the limitations codes are: *MGD* = Million gallons per day. *1/3M* = Once every three months in which a discharge occurs.

1. Federal Effluent Requirements *N/A* = Not applicable.
2. Best Professional Judgement *NL* = No limit; monitor and report.
3. Water Quality Standards *S.U.* = Standard units.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

- a. Sampling for Propylene Glycol shall be performed during the months of October – April. Sampling shall be conducted in accordance monitoring data and/or results shall be submitted with the DMR for the month in which monitoring was conducted. All samples shall be collected and analyzed in accordance with 40 CFR Part 136, an alternative method approved by EPA or a method approved in advance by the Virginia Department of Environmental Quality.
- b. Total Petroleum Hydrocarbons (TPH) shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW -141 (1995), or by EPA SW-846 Method 8015C for diesel range organics, or by EPA SW-846 Method 8270D. If Method 8270D is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons.
- c. The quarterly monitoring periods shall be January 1 – March 31, April 1 – June 30, July 1 – September 30, and October 1 – December 31. The DMR shall be submitted no later than the 10th day of the month following the monitoring period (April 10, July 10, October 10 and January 10, respectively).

Outfall 025

Discharge Location: Dead Run

Monitoring Frequency: Quarterly

Treatment: None

Discussion and/or Changes from Previous Permit:

- ➔ During the site visits conducted for this reissuance, the physical location of Outfall 025 was shifted slightly from that of the previous reissuance to allow for easier access. Industrial activities of concern and airport areas contributing to the storm water runoff have not changed as a result of the re-location.
- ➔ Secondary deicing and/or anti-icing may be conducted within the drainage area for this outfall on a limited basis. As such, there is potential for Propylene Glycol (PG) contamination. Quarterly monitoring shall be carried forward with this reissuance.
- ➔ Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of the permit, Propylene Glycol monitoring for Outfall 025 shall remain as specified below. Propylene Glycol from this outfall will not be accounted for by the on-line monitoring at SS001 (Horsepen Lake).

Effluent Limitations/Monitoring Requirements: Outfall 025

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Daily Maximum	Minimum	Maximum	Frequency ^(c)	Sample Type
Flow (MGD)	NA	NL	NL	N/A	N/A	1/3M	Estimate
pH	2	N/A	N/A	NL (S.U.)	NL (S.U.)	1/3M	Grab
Dissolved Oxygen (DO)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Conductivity	2	NL (µhoms/cm)	NL (µhoms/cm)	N/A	N/A	1/3M	Grab
Propylene Glycol ^(a)	2	N/A	NL (mg/L)	NL (mg/L)	NL (mg/L)	1/3M	Grab
Total Petroleum Hydrocarbons (TPH) ^(b)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Kjeldahl Nitrogen (TKN)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Biochemical Oxygen Demand (BOD ₅)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Chemical Oxygen Demand (COD)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Suspended Solids (TSS)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab

The basis for the limitations codes are:

MGD = Million gallons per day.

1/3M = Once every three months in which a discharge occurs.

- | | |
|----------------------------------|---|
| 1. Federal Effluent Requirements | <i>N/A</i> = Not applicable. |
| 2. Best Professional Judgement | <i>NL</i> = No limit; monitor and report. |
| 3. Water Quality Standards | <i>S.U.</i> = Standard units. |

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

- a. Sampling for Propylene Glycol shall be performed during the months of October – April. Sampling shall be conducted in accordance with current protocols established in the Airport's approved Deicing Management and Monitoring Plan and SWPPP. All field monitoring data and/or results shall be submitted with the DMR for the month in which monitoring was conducted. All samples shall be collected and analyzed in accordance with 40 CFR Part 136, an alternative method approved by EPA or a method approved in advance by the Virginia Department of Environmental Quality.
- b. Total Petroleum Hydrocarbons (TPH) shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW-141 (1995), or by EPA SW-846 Method 8015C for diesel range organics, or by EPA SW-846 Method 8270D. If Method 8270D is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons.
- c. The quarterly monitoring periods shall be January 1 – March 31, April 1 – June 30, July 1 – September 30, and October 1 – December 31. The DMR shall be submitted no later than the 10th day of the month following the monitoring period (April 10, July 10, October 10 and January 10, respectively).

Outfall 026

Discharge Location: UT to Cub Run

Monitoring Frequency: Quarterly

Treatment: None

Discussion and/or Changes from Previous Permit:

- ➔ Secondary deicing and/or anti-icing may be conducted within the drainage area for this outfall on a limited basis. As such, there is potential for Propylene Glycol (PG) contamination. Quarterly monitoring shall be carried forward with this reissuance.
- ➔ Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of the permit, Propylene Glycol monitoring for Outfall 026 shall remain as specified below. Propylene Glycol from this outfall will not be accounted for by the on-line monitoring at SS001 (Horsepen Lake).

Effluent Limitations/Monitoring Requirements: Outfall 026

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Daily Maximum	Minimum	Maximum	Frequency ^(c)	Sample Type
Flow (MGD)	NA	NL	NL	N/A	N/A	1/3M	Estimate
pH	2	N/A	N/A	NL (S.U.)	NL (S.U.)	1/3M	Grab
Dissolved Oxygen (DO)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Conductivity	2	NL (μhoms/cm)	NL (μhoms/cm)	N/A	N/A	1/3M	Grab
Propylene Glycol ^(a)	2	N/A	NL (mg/L)	NL (mg/L)	NL (mg/L)	1/3M	Grab
Total Petroleum Hydrocarbons (TPH) ^(b)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Kjeldahl Nitrogen (TKN)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Biochemical Oxygen Demand (BOD ₅)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Chemical Oxygen Demand (COD)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Suspended Solids (TSS)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab

The basis for the limitations codes are: *MGD* = Million gallons per day.

1/3M = Once every three months in which a discharge occurs.

1. Federal Effluent Requirements *N/A* = Not applicable.
2. Best Professional Judgement *NL* = No limit; monitor and report.
3. Water Quality Standards *S.U.* = Standard units.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

- a. Sampling for Propylene Glycol shall be performed during the months of October – April. Sampling shall be conducted in accordance with current protocols established in the Airport's approved Deicing Management and Monitoring Plan and SWPPP. All field monitoring data and/or results shall be submitted with the DMR for the month in which monitoring was conducted. All samples shall be collected and analyzed in accordance with 40 CFR Part 136, an alternative method approved by EPA or a method approved in advance by the Virginia Department of Environmental Quality.
- b. Total Petroleum Hydrocarbons (TPH) shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW-141 (1995), or by EPA SW-846 Method 8015C for diesel range organics, or by EPA SW-846 Method 8270D. If Method 8270D is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons.
- c. The quarterly monitoring periods shall be January 1 – March 31, April 1 – June 30, July 1 – September 30, and October 1 – December 31. The DMR shall be submitted no later than the 10th day of the month following the monitoring period (April 10, July 10, October 10 and January 10, respectively).

Outfall 027

Discharge Location: UT to Cub Run

Monitoring Frequency: Quarterly

Treatment: None

Discussion and/or Changes from Previous Permit:

- ➔ During the site visits conducted for this reissuance, the physical location of Outfall 027 was shifted slightly from that of the previous reissuance to allow for easier access. Industrial activities of concern and airport areas contributing to the storm water runoff have not changed as a result of the re-location.
- ➔ Secondary deicing and/or anti-icing may be conducted within the drainage area for this outfall on a limited basis. As such, there is potential for Propylene Glycol (PG) contamination.
- ➔ The monitoring frequency for this outfall has been modified from semi-annually to quarterly. This change is appropriate and reasonably necessary to achieve water quality standards and to carry out the goals of the CWA for the Bull Run TSS TMDL.
- ➔ Representative sampling is being implemented with this reissuance.

Outfall 027 is one of three non-application area outfalls (027, 028, and 029) located along Runway 12L. It is estimated that approximately 25% of the Propylene Glycol (PG) that is applied to an aircraft shears off during takeoff. Due to the location of this outfall along the runway, it is likely that the vast majority of PG will be accounted for via sampling at Outfall 027.

The industrial activities of concern (PG shearing) and airport areas contributing to the storm water runoff (i.e., the location of the outfalls along Runway 12L) are substantially identical for Outfalls 027, 028, and 029, and it is staff's opinion that the discharge from these outfalls will also be substantially identical. The Airport may test the discharge from just one of the outfalls (027) and report that the data also applies to the substantially identical outfall (028 and 029). Staff believes representative sampling is adequate for these three outfalls as the discharge ultimately reaches Cub Run which is again monitored at in-stream location SS002.

Outfall 027 was selected for testing because of its location as access to Outfall 028 and Outfall 029 is limited. Because of shearing, less PG enters the storm water drainage system as aircraft reach Outfall 028, and Outfall 029 during takeoff. As such, a gradual reduction in the concentrations of the parameters being monitored is expected from Outfall 027 to Outfall 028 and again from Outfall 028 to Outfall 029. It is staff's opinion that by monitoring Outfall 027 a representative value can be obtained for Outfall 028 and Outfall 029 since they are substantially identical.

- ➔ Under the existing permit, the Airport has monitored Dissolved Oxygen as a field parameter only. With this reissuance, the Airport shall report results of DO monitoring on the DMR for the month in which monitoring was conducted.
- ➔ Monitoring and reporting of Total Kjeldahl Nitrogen (TKN) has been added with this reissuance.
- ➔ Monitoring and reporting requirements for Propylene Glycol (PG) have been modified to report a minimum and maximum value. Monthly average reporting is no longer required.
- ➔ Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of the permit, Propylene Glycol monitoring for Outfall 027 shall remain as specified below. Propylene Glycol from this outfall will not be accounted for by the on-line monitoring at SS001 (Horsepen Lake).

Effluent Limitations/Monitoring Requirements: Outfall 027

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date. Discharge data from Outfall 027 may be submitted to represent Outfall 028 and Outfall 029.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Frequency^(c)</u>	<u>Sample Type</u>
Flow (MGD)	NA	NL	NL	N/A	N/A	1/3M	Estimate
pH	2	N/A	N/A	NL (S.U.)	NL (S.U.)	1/3M	Grab
Dissolved Oxygen (DO)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Conductivity	2	NL (μhoms/cm)	NL (μhoms/cm)	NA	NA	1/3M	Grab
Propylene Glycol ^(a)	2	N/A	NL (mg/L)	NL (mg/L)	NL (mg/L)	1/3M	Grab
Total Petroleum Hydrocarbons (TPH) ^(b)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Kjeldahl Nitrogen (TKN)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Biochemical Oxygen Demand (BOD ₅)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Chemical Oxygen Demand (COD)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Suspended Solids (TSS)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab

The basis for the limitations codes are: *MGD* = Million gallons per day.

1/3M = Once every three months in which a discharge occurs.

1. Federal Effluent Requirements *N/A* = Not applicable.
2. Best Professional Judgement *NL* = No limit; monitor and report.
3. Water Quality Standards *S.U.* = Standard units.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

- a. Sampling for Propylene Glycol shall be performed during the months of October – April. Sampling shall be conducted in accordance with current protocols established in the Airport's approved Deicing Management and Monitoring Plan and SWPPP. All field monitoring data and/or results shall be submitted with the DMR for the month in which monitoring was conducted. All samples shall be collected and analyzed in accordance with 40 CFR Part 136, an alternative method approved by EPA or a method approved in advance by the Virginia Department of Environmental Quality.
- b. Total Petroleum Hydrocarbons (TPH) shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW -141 (1995), or by EPA SW-846 Method 8015C for diesel range organics, or by EPA SW-846 Method 8270D. If Method 8270D is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons.
- c. The quarterly monitoring periods shall be January 1 – March 31, April 1 – June 30, July 1 – September 30, and October 1 – December 31. The DMR shall be submitted no later than the 10th day of the month following the monitoring period (April 10, July 10, October 10 and January 10, respectively).

Outfall 028

Discharge Location: UT to Cub Run

Monitoring Frequency: Quarterly

Treatment: None

Discussion and/or Changes from Previous Permit:

- ➔ Secondary deicing and/or anti-icing may be conducted within the drainage area for this outfall on a limited basis. As such, there is potential for Propylene Glycol (PG) contamination.
- ➔ The monitoring frequency for this outfall has been modified from semi-annually to quarterly. This change is appropriate and reasonably necessary to achieve water quality standards and to carry out the goals of the CWA for the Bull Run TSS TMDL.
- ➔ Representative sampling is being implemented with this reissuance.

Outfall 028 is one of three non-application area outfalls (027, 028, and 029) located along Runway 12L. It is estimated that approximately 25% of the Propylene Glycol (PG) that is applied to an aircraft shears off during takeoff. Due to the location of this outfall along the runway, it is likely that the vast majority of PG will be accounted for via sampling at Outfall 027. A review of monitoring data submitted by the Airport indicates that PG has not been detected at Outfall 028, and that there is very little flow.

The industrial activities of concern (PG shearing) and airport areas contributing to the storm water runoff (i.e., the location of the outfalls along Runway 12L) are substantially identical for Outfalls 027, 028, and 029, and it is staff's opinion that the discharge from these outfalls will also be substantially identical. The Airport may test the discharge from just one of the outfalls (027) and report that the data also applies to the substantially identical outfall (028). Staff believes representative sampling is adequate for these three outfalls as the discharge ultimately reaches Cub Run which is again monitored at in-stream location SS002.

Outfall 027 was selected for testing because of its location as access to Outfall 028 and Outfall 029 is limited. Because of shearing, less PG enters the storm water drainage system as aircraft reach Outfall 028, and Outfall 029 during takeoff. As such, a gradual reduction in the concentrations of the parameters being monitored is expected from Outfall 027 to Outfall 028 and again from Outfall 028 to Outfall 029. It is staff's opinion that by monitoring Outfall 027 a representative value can be obtained for Outfall 028 and Outfall 029 since they are substantially identical.

- ➔ Under the existing permit, the Airport has monitored Dissolved Oxygen as a field parameter only. With this reissuance, the Airport shall report results of DO monitoring on the DMR for the month in which monitoring was conducted.
- ➔ Monitoring and reporting of Total Kjeldahl Nitrogen (TKN) has been added with this reissuance.
- ➔ Monitoring and reporting requirements for Propylene Glycol (PG) have been modified to report a minimum and maximum value. Monthly average reporting is no longer required.
- ➔ Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of the permit, Propylene Glycol monitoring for Outfall 028 shall remain as specified below. Propylene Glycol from this outfall will not be accounted for by the on-line monitoring at SS001 (Horsepen Lake).

Effluent Limitations/Monitoring Requirements: Outfall 028

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date. Discharge data from Outfall 027 may be submitted to represent Outfall 028.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Frequency^(c)</u>	<u>Sample Type</u>
Flow (MGD)	NA	NL	NL	N/A	N/A	1/3M	Estimate
pH	2	N/A	N/A	NL (S.U.)	NL (S.U.)	1/3M	Grab
Dissolved Oxygen (DO)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Conductivity	2	NL (μhoms/cm)	NL (μhoms/cm)	N/A	N/A	1/3M	Grab
Propylene Glycol ^(a)	2	N/A	NL (mg/L)	NL (mg/L)	NL (mg/L)	1/3M	Grab
Total Petroleum Hydrocarbons (TPH) ^(b)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Kjeldahl Nitrogen (TKN)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Biochemical Oxygen Demand (BOD ₅)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Chemical Oxygen Demand (COD)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Suspended Solids (TSS)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab

The basis for the limitations codes are: *MGD* = Million gallons per day.

1/3M = Once every three months in which a discharge occurs.

1. Federal Effluent Requirements *N/A* = Not applicable.
2. Best Professional Judgement *NL* = No limit; monitor and report.
3. Water Quality Standards *S.U.* = Standard units.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

- a. Sampling for Propylene Glycol shall be performed during the months of October – April. Sampling shall be conducted in accordance with current protocols established in the Airport's approved Deicing Management and Monitoring Plan and SWPPP. All field monitoring data and/or results shall be submitted with the DMR for the month in which monitoring was conducted. All samples shall be collected and analyzed in accordance with 40 CFR Part 136, an alternative method approved by EPA or a method approved in advance by the Virginia Department of Environmental Quality.
- b. Total Petroleum Hydrocarbons (TPH) shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW -141 (1995), or by EPA SW-846 Method 8015C for diesel range organics, or by EPA SW-846 Method 8270D. If Method 8270D is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons.
- c. The quarterly monitoring periods shall be January 1 – March 31, April 1 – June 30, July 1 – September 30, and October 1 – December 31. The DMR shall be submitted no later than the 10th day of the month following the monitoring period (April 10, July 10, October 10 and January 10, respectively).

Outfall 029

Discharge Location: UT to Cub Run

Monitoring Frequency: Quarterly

Treatment: None

Discussion and/or Changes from Previous Permit:

- ➔ Secondary deicing and/or anti-icing may be conducted within the drainage area for this outfall on a limited basis. As such, there is potential for Propylene Glycol (PG) contamination.
- ➔ The monitoring frequency for this outfall has been modified from semi-annually to quarterly. This change is appropriate and reasonably necessary to achieve water quality standards and to carry out the goals of the CWA for the Bull Run TSS TMDL.
- ➔ Representative sampling is being implemented with this reissuance .

Outfall 029 is one of three non-application area outfalls (027, 028, and 029) located along Runway 12L. It is estimated that approximately 25% of the Propylene Glycol (PG) that is applied to an aircraft shears off during takeoff. Due to the location of this outfall along the runway, it is likely that the vast majority of PG will be accounted for via sampling at Outfall 027. A review of monitoring data submitted by the Airport indicates that PG has not been detected at Outfall 029, and that there is very little flow.

The industrial activities of concern (PG shearing) and airport areas contributing to the storm water runoff (i.e., the location of the outfalls along Runway 12L) are substantially identical for Outfalls 027, 028, and 029, and it is staff's opinion that the discharge from these outfalls will also be substantially identical. The Airport may test the discharge from just one of the outfalls (027) and report that the data also applies to the substantially identical outfall (029). Staff believes representative sampling is adequate for these three outfalls as the discharge ultimately reaches Cub Run which is again monitored at in-stream location SS002.

Outfall 027 was selected for testing because of its location as access to Outfall 028 and Outfall 029 is limited. Because of shearing, less PG enters the storm water drainage system as aircraft reach Outfall 028, and Outfall 029 during takeoff. As such, a gradual reduction in the concentrations of the parameters being monitored is expected from Outfall 027 to Outfall 028 and again from Outfall 028 to Outfall 029. It is staff's opinion that by monitoring Outfall 027 a representative value can be obtained for Outfall 028 and Outfall 029 since they are substantially identical.

- ➔ Under the existing permit, the Airport has monitored Dissolved Oxygen as a field parameter only. With this reissuance, the Airport shall report results of DO monitoring on the DMR for the month in which monitoring was conducted.
- ➔ Monitoring and reporting of Total Kjeldahl Nitrogen (TKN) has been added with this reissuance.
- ➔ Monitoring and reporting requirements for Propylene Glycol (PG) have been modified to report a minimum and maximum value. Monthly average reporting is no longer required.
- ➔ Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of the permit, Propylene Glycol monitoring for Outfall 029 shall remain as specified below. Propylene Glycol from this outfall will not be accounted for by the on-line monitoring at SS001 (Horsepen Lake).

Effluent Limitations/Monitoring Requirements: Outfall 029

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date. Discharge data from Outfall 027 may be submitted to represent Outfall 029.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Frequency^(c)</u>	<u>Sample Type</u>
Flow (MGD)	NA	NL	NL	N/A	N/A	1/3M	Estimate
pH	2	N/A	N/A	NL (S.U.)	NL (S.U.)	1/3M	Grab
Dissolved Oxygen (DO)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Conductivity	2	NL (μhoms/cm)	NL (μhoms/cm)	N/A	N/A	1/3M	Grab
Propylene Glycol ^(a)	2	N/A	NL (mg/L)	NL (mg/L)	NL (mg/L)	1/3M	Grab
Total Petroleum Hydrocarbons (TPH) ^(b)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Kjeldahl Nitrogen (TKN)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Biochemical Oxygen Demand (BOD ₅)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Chemical Oxygen Demand (COD)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab
Total Suspended Solids (TSS)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/3M	Grab

The basis for the limitations codes are: *MGD* = Million gallons per day.

1/3M = Once every three months in which a discharge occurs.

1. Federal Effluent Requirements *N/A* = Not applicable.
2. Best Professional Judgement *NL* = No limit; monitor and report.
3. Water Quality Standards *S.U.* = Standard units.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

- a. Sampling for Propylene Glycol shall be performed during the months of October – April. Sampling shall be conducted in accordance with current protocols established in the Airport's approved Deicing Management and Monitoring Plan and SWPPP. All field monitoring data and/or results shall be submitted with the DMR for the month in which monitoring was conducted. All samples shall be collected and analyzed in accordance with 40 CFR Part 136, an alternative method approved by EPA or a method approved in advance by the Virginia Department of Environmental Quality.
- b. Total Petroleum Hydrocarbons (TPH) shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW -141 (1995), or by EPA SW-846 Method 8015C for diesel range organics, or by EPA SW-846 Method 8270D. If Method 8270D is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons.
- c. The quarterly monitoring periods shall be January 1 – March 31, April 1 – June 30, July 1 – September 30, and October 1 – December 31. The DMR shall be submitted no later than the 10th day of the month following the monitoring period (April 10, July 10, October 10 and January 10, respectively).

Outfall 030

Discharge Location: UT to Cub Run

Monitoring Frequency: Monthly

Treatment: None

Discussion and/or Changes from Previous Permit:

- ➔ The monitoring frequency for this outfall has been modified from semi-annually to monthly per the request of the Airport.
- ➔ Deicing and/or anti-icing activities do not take place within the drainage area for this outfall. As such, conductivity monitoring is being discontinued with this reissuance. Conductivity is most relevant with Propylene Glycol use due to its high oxygen demand.

Effluent Limitations/Monitoring Requirements: Outfall 030

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Daily Maximum	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NL	N/A	N/A	1/M	Estimate
pH	2	N/A	N/A	NL (S.U.)	NL (S.U.)	1/M	Grab
Total Petroleum Hydrocarbons (TPH) ^(a)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab
Total Suspended Solids (TSS)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab

The basis for the limitations codes are: *MGD* = Million gallons per day.

1/M = Once per month in which a discharge occurs.

1. Federal Effluent Requirements *N/A* = Not applicable.
2. Best Professional Judgement *NL* = No limit; monitor and report.
3. Water Quality Standards *S.U.* = Standard units.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

- a. Total Petroleum Hydrocarbons (TPH) shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW -141 (1995), or by EPA SW-846 Method 8015C for diesel range organics, or by EPA SW-846 Method 8270D. If Method 8270D is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons.

Outfall 031

Discharge Location: UT to Cub Run

Monitoring Frequency: Monthly

Treatment: None

Discussion and/or Changes from Previous Permit:

- ➔ Due to construction activities at the Airport, this outfall has been added with this reissuance.
- ➔ Under the existing permit, the Airport has monitored Dissolved Oxygen as a field parameter only. With this reissuance, the Airport shall report results of DO monitoring on the DMR for the month in which monitoring was conducted.
- ➔ Monitoring and reporting of Total Kjeldahl Nitrogen (TKN) has been added with this reissuance.
- ➔ Monitoring and reporting requirements for Propylene Glycol (PG) have been implemented to be consistent with requirements found elsewhere within this permit.
- ➔ Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of the permit, Propylene Glycol monitoring for Outfall 031 shall remain as specified below. Propylene Glycol from this outfall will not be accounted for by the on-line monitoring at SS001 (Horsepen Lake).

Effluent Limitations/Monitoring Requirements: Outfall 031

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Daily Maximum	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NL	N/A	N/A	1/M	Estimate
pH	2	N/A	N/A	NL (S.U.)	NL (S.U.)	1/M	Grab
Dissolved Oxygen (DO)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab
Conductivity	2	NL (μhoms/cm)	NL (μhoms/cm)	N/A	N/A	1/M	Grab
Propylene Glycol ^(a)	2	N/A	NL (mg/L)	NL (mg/L)	NL (mg/L)	1/Event	Grab
Total Petroleum Hydrocarbons (TPH) ^(b)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab
Total Kjeldahl Nitrogen (TKN)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab
Biochemical Oxygen Demand (BOD ₅)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab
Chemical Oxygen Demand (COD)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab
Total Suspended Solids (TSS)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab

The basis for the limitations codes are:

MGD = Million gallons per day.

1/M = Once per month in which a discharge occurs.

1. Federal Effluent Requirements

N/A = Not applicable.

1/Event = Once per deicing event in which there is a Propylene Glycol discharge.

2. Best Professional Judgement

NL = No limit; monitor and report.

3. Water Quality Standards

S.U. = Standard units.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

Deicing Event = A period of precipitation in which deicing/anti-icing fluids are applied which occurs 48 hours from the previous precipitation requiring deicing/anti-icing fluid application.

- a. Sampling for Propylene Glycol shall be performed during the months of October – April. Sampling shall be conducted in accordance with current protocols established in the Airport's approved Deicing Management and Monitoring Plan and SWPPP. All field monitoring data and/or results shall be submitted with the DMR for the month in which monitoring was conducted. All samples shall be collected and analyzed in accordance with 40 CFR Part 136, an alternative method approved by EPA or a method approved in advance by the Virginia Department of Environmental Quality.
- b. Total Petroleum Hydrocarbons (TPH) shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW-141 (1995), or by EPA SW-846 Method 8015C for diesel range organics, or by EPA SW-846 Method 8270D. If Method 8270D is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons.

Outfall 032

Discharge Location: UT to Cub Run

Monitoring Frequency: Monthly

Treatment: Oil-Water Separator

Discussion and/or Changes from Previous Permit:

- ➔ Due to construction activities at the Airport, this outfall has been added with this reissuance.
- ➔ The storm water discharge from Outfall 032 is associated with fuel storage areas. DEQ guidance indicates effluent limitations are required for these types of discharges.

Effluent Limitations/Monitoring Requirements: Outfall 032

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Frequency</u>	<u>Sample Type</u>
Flow (MGD)	NA	NL	NL	N/A	N/A	1/M	Estimate
pH	2,3	N/A	N/A	6.0 S.U.	9.0 S.U.	1/M	Grab
Total Petroleum Hydrocarbons (TPH) ^(a)	2,3	15 mg/L	30 mg/L	N/A	N/A	1/M	Grab
Total Suspended Solids (TSS)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab

The basis for the limitations codes are: *MGD* = Million gallons per day. *1/M* = Once per month in which a discharge occurs.

- 1. Federal Effluent Requirements *N/A* = Not applicable.
- 2. Best Professional Judgement *NL* = No limit; monitor and report.
- 3. Water Quality Standards *S.U.* = Standard units.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

- a. Total Petroleum Hydrocarbons (TPH) shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW -141 (1995), or by EPA SW-846 Method 8015C for diesel range organics, or by EPA SW-846 Method 8270D. If Method 8270D is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons.

SS001

Discharge Location: Horsepen Lake

Monitoring Frequency: Monthly

Treatment: None

Discussion and/or Changes from Previous Permit:

- ➔ Under the existing permit, the Airport has monitored Dissolved Oxygen as a field parameter only. With this reissuance, the Airport shall report results of DO monitoring on the DMR for the month in which monitoring was conducted.
- ➔ Monitoring and reporting of Total Kjeldahl Nitrogen (TKN) has been added with this reissuance.
- ➔ Monitoring and reporting requirements for Propylene Glycol (PG) have been implemented to be consistent with requirements found elsewhere within this permit.
- ➔ Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of the permit, Propylene Glycol monitoring shall be accounted for by the on-line monitoring at SS001 (Horsepen Lake).

Effluent Limitations/Monitoring Requirements: SS001

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Daily Maximum	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NL	N/A	N/A	1/M	Estimate
pH	2	N/A	N/A	NL (S.U.)	NL (S.U.)	1/M	Grab
Dissolved Oxygen (DO) (October – April)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/Event	Grab
Dissolved Oxygen (DO) (May – September)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab
Conductivity (October – April)	2	NL (µhoms/cm)	NL (µhoms/cm)	N/A	N/A	1/Event	Grab
Conductivity (May – September)	2	NL (µhoms/cm)	NL (µhoms/cm)	N/A	N/A	1/M	Grab
Propylene Glycol ^(a)	2	N/A	NL (mg/L)	NL (mg/L)	NL (mg/L)	2/D	Grab
Total Petroleum Hydrocarbons (TPH) ^(b)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab
Total Kjeldahl Nitrogen (TKN)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab
Biochemical Oxygen Demand (BOD ₅) (October – April)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/Event	Grab
Biochemical Oxygen Demand (BOD ₅) (May – September)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab
Chemical Oxygen Demand (COD) (October – April)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/Event	Grab
Chemical Oxygen Demand (COD) (May – September)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab
Total Suspended Solids (TSS)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab

The basis for the limitations codes are:

MGD = Million gallons per day.

1/M = Once per month in which a discharge occurs.

1. Federal Effluent Requirements

N/A = Not applicable.

2/D = Twice per day.

2. Best Professional Judgement

NL = No limit; monitor and report.

1/Event = Once per deicing event in which there is a Propylene Glycol discharge.

3. Water Quality Standards

S.U. = Standard units.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

Deicing = A period of precipitation in which deicing/anti-icing fluids are applied which occurs 48 hours from the previous precipitation requiring deicing/anti-icing fluid application.

- a. Sampling for Propylene Glycol shall be performed twice per day during the months of October – April beginning with the first deicing/anti-icing fluid application where a discharge is anticipated. Sampling shall be conducted once between the hours of 6am and 11am and once between the hours of 2pm and 7pm. Sampling shall be conducted until Propylene Glycol concentrations fall below the performance target concentration of 100 mg/L and for a period of fourteen (14) days thereafter. Sampling shall be conducted in accordance with current protocols established in the Airport's approved Deicing Management and Monitoring Plan and SWPPP. All field monitoring data and/or results shall be submitted with the DMR for the month in which monitoring was conducted. All samples shall be collected and analyzed in accordance with 40 CFR Part 136, an alternative method approved by EPA or a method approved in advance by the Virginia Department of Environmental Quality. Any changes to the sampling and monitoring protocol must be approved in advance by the Virginia Department of Environmental Quality. Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of this permit, Propylene Glycol monitoring shall be accounted for by the on-line monitoring at SS001 (Horsepen Lake). In the event of TOC instrumentation malfunction (i.e., mechanical, power failure, vandalism, etc.), the Airport shall resume manual sampling for Propylene Glycol at SS001 in accordance with Part 1.A.15 of this permit.
- b. Total Petroleum Hydrocarbons (TPH) shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW-141 (1995), or by EPA SW-846 Method 8015C for diesel range organics, or by EPA SW-846 Method 8270D. If Method 8270D is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons.

SS002

Discharge Location: Cub Run

Monitoring Frequency: Monthly

Treatment: None

Discussion and/or Changes from Previous Permit:

- Under the existing permit, the Airport has monitored Dissolved Oxygen as a field parameter only. With this reissuance, the Airport shall report results of DO monitoring on the DMR for the month in which monitoring was conducted.
- Monitoring and reporting of Total Kjeldahl Nitrogen (TKN) has been added with this reissuance.
- Monitoring and reporting requirements for Propylene Glycol (PG) have been implemented to be consistent with requirements found elsewhere within this permit.
- Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of the permit, Propylene Glycol monitoring for In-Stream sampling location SS002 shall remain as specified below. Propylene Glycol from this outfall will not be accounted for by the on-line monitoring at SS001 (Horsepen Lake).

Effluent Limitations/Monitoring Requirements: SS002

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Daily Maximum	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NL	N/A	N/A	1/M	Estimate
pH	2	N/A	N/A	NL (S.U.)	NL (S.U.)	1/M	Grab
Dissolved Oxygen (DO)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab
Conductivity	2	NL (µhoms/cm)	NL (µhoms/cm)	N/A	N/A	1/M	Grab
Propylene Glycol ^(a)	2	N/A	NL (mg/L)	NL (mg/L)	NL (mg/L)	1/Event	Grab
Total Petroleum Hydrocarbons (TPH) ^(b)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab
Total Kjeldahl Nitrogen (TKN)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab
Biochemical Oxygen Demand (BOD ₅)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab
Chemical Oxygen Demand (COD)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab
Total Suspended Solids (TSS)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab

The basis for the limitations codes are:

MGD = Million gallons per day.

1/M = Once per month in which a discharge occurs.

1. Federal Effluent Requirements

N/A = Not applicable.

1/Event = Once per deicing event in which there is a Propylene Glycol discharge.

2. Best Professional Judgement

NL = No limit; monitor and report.

3. Water Quality Standards

S.U. = Standard units.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

Deicing Event = A period of precipitation in which deicing/anti-icing fluids are applied which occurs 48 hours from the previous precipitation requiring deicing/anti-icing fluid application.

a. Sampling for Propylene Glycol shall be performed during the months of October – April. Sampling shall be conducted in accordance with current protocols established in the Airport's approved Deicing Management and Monitoring Plan and SWPPP. All field monitoring data and/or results shall be submitted with the DMR for the month in which monitoring was conducted. All samples shall be collected and analyzed in accordance with 40 CFR Part 136, an alternative method approved by EPA or a method approved in advance by the Virginia Department of Environmental Quality.

b. Total Petroleum Hydrocarbons (TPH) shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW -141 (1995), or by EPA SW-846 Method 8015C for diesel range organics, or by EPA SW-846 Method 8270D. If Method 8270D is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons.

c. At least four TSS samples shall be collected from a storm event that is greater than 0.1 inches in magnitude and that occurs at least 72 hours from the previously measurable (greater than 0.1 inch rainfall) storm event. The required 72-hour storm event is waived where the preceding measurable storm event did not result in a measurable discharge from the facility.

SS003

Discharge Location: Landmark Aviation

Monitoring Frequency: Monthly

Treatment: None

Discussion and/or Changes from Previous Permit:

- ➔ Due to construction activities at the Airport, this in-stream sampling location has been added with this reissuance at the request of the Airport.
- ➔ Under the existing permit, the Airport has monitored Dissolved Oxygen as a field parameter only. With this reissuance, the Airport shall report results of DO monitoring on the DMR for the month in which monitoring was conducted.
- ➔ Monitoring and reporting of Total Kjeldahl Nitrogen (TKN) has been added with this reissuance.
- ➔ Monitoring and reporting requirements for Propylene Glycol (PG) have been implemented to be consistent with requirements found elsewhere within this permit.
- ➔ Upon installation of TOC instrumentation and initial demonstration of capability, as required in Part I.C.2.c of the permit, Propylene Glycol monitoring for In-Stream sampling location SS003 shall remain as specified below. Propylene Glycol from this outfall will not be accounted for by the on-line monitoring at SS001 (Horsepen Lake).

Effluent Limitations/Monitoring Requirements: SS003

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Daily Maximum	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NL	N/A	N/A	1/M	Estimate
pH	2	N/A	N/A	NL (S.U.)	NL (S.U.)	1/M	Grab
Dissolved Oxygen (DO)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab
Conductivity	2	NL (μhoms/cm)	NL (μhoms/cm)	N/A	N/A	1/M	Grab
Propylene Glycol ^(a)	2	N/A	NL (mg/L)	NL (mg/L)	NL (mg/L)	1/M	Grab
Total Petroleum Hydrocarbons (TPH) ^(b)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab
Total Kjeldahl Nitrogen (TKN)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab
Biochemical Oxygen Demand (BOD ₅)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab
Chemical Oxygen Demand (COD)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab
Total Suspended Solids (TSS)	2	NL (mg/L)	NL (mg/L)	N/A	N/A	1/M	Grab

The basis for the limitations codes are: *MGD* = Million gallons per day.

1/M = Once per month in which a discharge occurs.

- 1. Federal Effluent Requirements *N/A* = Not applicable.
- 2. Best Professional Judgement *NL* = No limit; monitor and report.
- 3. Water Quality Standards *S.U.* = Standard units.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

- a. Sampling for Propylene Glycol shall be performed during the months of October – April. Sampling shall be conducted in accordance with current protocols established in the Airport's approved Deicing Management and Monitoring Plan and SWPPP. All field monitoring data and/or results shall be submitted with the DMR for the month in which monitoring was conducted. All samples shall be collected and analyzed in accordance with 40 CFR Part 136, an alternative method approved by EPA or a method approved in advance by the Virginia Department of Environmental Quality.
- b. Total Petroleum Hydrocarbons (TPH) shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW-141 (1995), or by EPA SW-846 Method 8015C for diesel range organics, or by EPA SW-846 Method 8270D. If Method 8270D is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons.

FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Washington Dulles International Airport
Receiving Stream: Cub Run, UT to Cub Run

Permit No.: VA0089541

Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information				Stream Flows				Mixing Information				Effluent Information			
Mean Hardness (as CaCO ₃) =		mg/L	1Q10 (Annual) =	0 MGD	Annual - 1Q10 Mix =	0 %	Mean Hardness (as CaCO ₃) =	50 mg/L							
90% Temperature (Annual) =		deg C	7Q10 (Annual) =	0 MGD	- 7Q10 Mix =	0 %	90% Temp (Annual) =	deg C							
90% Temperature (Wet season) =		deg C	30Q10 (Annual) =	0 MGD	- 30Q10 Mix =	0 %	90% Temp (Wet season) =	deg C							
90% Maximum pH =		SU	1Q10 (Wet season) =	0 MGD	Wet Season - 1Q10 Mix =	0 %	90% Maximum pH =	8 SU							
10% Maximum pH =		SU	30Q10 (Wet season) =	0 MGD	- 30Q10 Mix =	0 %	10% Maximum pH =	SU							
Tier Designation (1 or 2) =	1		30Q5 =	0 MGD			Discharge Flow =	1.45 MGD							
Public Water Supply (PWS) Y/N? =	n		Harmonic Mean =	0 MGD											
Trout Present Y/N? =	n		Annual Average =	0 MGD											
Early Life Stages Present Y/N? =	y														

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Acenaphthene	0	---	---	na	2.7E+03	---	---	na	2.7E+03	---	---	---	---	---	---	---	---	---	---	---	---
Acrolein	0	---	---	na	7.8E+02	---	---	na	7.8E+02	---	---	---	---	---	---	---	---	---	---	---	---
Acrylonitrile ^c	0	---	---	na	6.6E+00	---	---	na	6.6E+00	---	---	---	---	---	---	---	---	---	---	---	---
Aldrin ^c	0	3.0E+00	---	na	1.4E-03	3.0E+00	---	na	1.4E-03	---	---	---	---	---	---	---	---	3.0E+00	---	na	1.4E-03
Ammonia-N (mg/l) (Yearly)	0	8.41E+00	2.43E+00	na	---	8.4E+00	2.4E+00	na	---	---	---	---	---	---	---	---	---	8.4E+00	2.4E+00	na	---
Ammonia-N (mg/l) (High Flow)	0	8.41E+00	1.24E+00	na	---	8.4E+00	1.2E+00	na	---	---	---	---	---	---	---	---	---	8.4E+00	1.2E+00	na	---
Anthracene	0	---	---	na	1.1E+05	---	---	na	1.1E+05	---	---	---	---	---	---	---	---	---	---	---	---
Antimony	0	---	---	na	4.3E+03	---	---	na	4.3E+03	---	---	---	---	---	---	---	---	---	---	---	---
Arsenic	0	3.4E+02	1.5E+02	na	---	3.4E+02	1.5E+02	na	---	---	---	---	---	---	---	---	---	3.4E+02	1.5E+02	na	---
Barium	0	---	---	na	---	---	---	na	---	---	---	---	---	---	---	---	---	---	---	---	---
Benzene ^c	0	---	---	na	7.1E+02	---	---	na	7.1E+02	---	---	---	---	---	---	---	---	---	---	---	---
Benzidine ^c	0	---	---	na	5.4E-03	---	---	na	5.4E-03	---	---	---	---	---	---	---	---	---	---	---	---
Benzo (a) anthracene ^c	0	---	---	na	4.9E-01	---	---	na	4.9E-01	---	---	---	---	---	---	---	---	---	---	---	---
Benzo (b) fluoranthene ^c	0	---	---	na	4.9E-01	---	---	na	4.9E-01	---	---	---	---	---	---	---	---	---	---	---	---
Benzo (k) fluoranthene ^c	0	---	---	na	4.9E-01	---	---	na	4.9E-01	---	---	---	---	---	---	---	---	---	---	---	---
Benzo (a) pyrene ^c	0	---	---	na	4.9E-01	---	---	na	4.9E-01	---	---	---	---	---	---	---	---	---	---	---	---
Bis(2-Chloroethyl) Ether	0	---	---	na	1.4E+01	---	---	na	1.4E+01	---	---	---	---	---	---	---	---	---	---	---	---
Bis(2-Chloroisopropyl) Ether	0	---	---	na	1.7E+05	---	---	na	1.7E+05	---	---	---	---	---	---	---	---	---	---	---	---
Bromoforn ^c	0	---	---	na	3.6E+03	---	---	na	3.6E+03	---	---	---	---	---	---	---	---	---	---	---	---
Butylbenzylphthalate	0	---	---	na	5.2E+03	---	---	na	5.2E+03	---	---	---	---	---	---	---	---	---	---	---	---
Cadmium	0	1.8E+00	6.6E-01	na	---	1.8E+00	6.6E-01	na	---	---	---	---	---	---	---	---	---	1.8E+00	6.6E-01	na	---
Carbon Tetrachloride ^c	0	---	---	na	4.4E+01	---	---	na	4.4E+01	---	---	---	---	---	---	---	---	---	---	---	---
Chlordane ^c	0	2.4E+00	4.3E-03	na	2.2E-02	2.4E+00	4.3E-03	na	2.2E-02	---	---	---	---	---	---	---	---	2.4E+00	4.3E-03	na	2.2E-02
Chlordane ^c	0	8.6E+05	2.3E+05	na	---	8.6E+05	2.3E+05	na	---	---	---	---	---	---	---	---	---	8.6E+05	2.3E+05	na	---
Chloride	0	1.9E+01	1.1E+01	na	---	1.9E+01	1.1E+01	na	---	---	---	---	---	---	---	---	---	1.9E+01	1.1E+01	na	---
TRC	0	---	---	na	2.1E+04	---	---	na	2.1E+04	---	---	---	---	---	---	---	---	---	---	---	---
Chlorobenzene	0	---	---	na	---	---	---	na	---	---	---	---	---	---	---	---	---	---	---	---	---

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane ^C	0	--	--	na	3.4E+02	--	--	na	3.4E+02	--	--	--	--	--	--	--	--	--	--	na	3.4E+02
Chloroform ^C	0	--	--	na	2.9E+04	--	--	na	2.9E+04	--	--	--	--	--	--	--	--	--	--	na	2.9E+04
2-Chloronaphthalene	0	--	--	na	4.3E+03	--	--	na	4.3E+03	--	--	--	--	--	--	--	--	--	--	na	4.3E+03
2-Chlorophenol	0	--	--	na	4.0E+02	--	--	na	4.0E+02	--	--	--	--	--	--	--	--	--	--	na	4.0E+02
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	8.3E-02	4.1E-02	na	--	--	--	--	--	--	--	--	--	8.3E-02	4.1E-02	na	--
Chromium III	0	3.2E+02	4.2E+01	na	--	3.2E+02	4.2E+01	na	--	--	--	--	--	--	--	--	--	3.2E+02	4.2E+01	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.6E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.6E+01	1.1E+01	na	--
Chromium, Total	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Chrysene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Copper	0	7.0E+00	5.0E+00	na	--	7.0E+00	5.0E+00	na	--	--	--	--	--	--	--	--	--	7.0E+00	5.0E+00	na	--
Cyanide	0	2.2E+01	5.2E+00	na	2.2E+05	2.2E+01	5.2E+00	na	2.2E+05	--	--	--	--	--	--	--	--	2.2E+01	5.2E+00	na	2.2E+05
DDD ^C	0	--	--	na	8.4E-03	--	--	na	8.4E-03	--	--	--	--	--	--	--	--	--	--	na	8.4E-03
DDE ^C	0	--	--	na	5.9E-03	--	--	na	5.9E-03	--	--	--	--	--	--	--	--	--	--	na	5.9E-03
DDT ^C	0	1.1E+00	1.0E-03	na	5.9E-03	1.1E+00	1.0E-03	na	5.9E-03	--	--	--	--	--	--	--	--	1.1E+00	1.0E-03	na	5.9E-03
Demeton	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Dibenz(a,h)anthracene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Dibutyl phthalate	0	--	--	na	1.2E+04	--	--	na	1.2E+04	--	--	--	--	--	--	--	--	--	--	na	1.2E+04
Dichloromethane (Methylene Chloride) ^C	0	--	--	na	1.6E+04	--	--	na	1.6E+04	--	--	--	--	--	--	--	--	--	--	na	1.6E+04
1,2-Dichlorobenzene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	--	--	na	1.7E+04
1,3-Dichlorobenzene	0	--	--	na	2.6E+03	--	--	na	2.6E+03	--	--	--	--	--	--	--	--	--	--	na	2.6E+03
1,4-Dichlorobenzene	0	--	--	na	2.6E+03	--	--	na	2.6E+03	--	--	--	--	--	--	--	--	--	--	na	2.6E+03
3,3-Dichlorobenzidine ^C	0	--	--	na	7.7E-01	--	--	na	7.7E-01	--	--	--	--	--	--	--	--	--	--	na	7.7E-01
Dichlorobromomethane ^C	0	--	--	na	4.6E+02	--	--	na	4.6E+02	--	--	--	--	--	--	--	--	--	--	na	4.6E+02
1,2-Dichloroethane ^C	0	--	--	na	9.9E+02	--	--	na	9.9E+02	--	--	--	--	--	--	--	--	--	--	na	9.9E+02
1,1-Dichloroethylene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	--	--	na	1.7E+04
1,2-trans-dichloroethylene	0	--	--	na	1.4E+05	--	--	na	1.4E+05	--	--	--	--	--	--	--	--	--	--	na	1.4E+05
2,4-Dichlorophenol	0	--	--	na	7.9E+02	--	--	na	7.9E+02	--	--	--	--	--	--	--	--	--	--	na	7.9E+02
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,2-Dichloropropane ^C	0	--	--	na	3.9E+02	--	--	na	3.9E+02	--	--	--	--	--	--	--	--	--	--	na	3.9E+02
1,3-Dichloropropene	0	--	--	na	1.7E+03	--	--	na	1.7E+03	--	--	--	--	--	--	--	--	--	--	na	1.7E+03
Dieldrin ^C	0	2.4E-01	5.6E-02	na	1.4E-03	2.4E-01	5.6E-02	na	1.4E-03	--	--	--	--	--	--	--	--	2.4E-01	5.6E-02	na	1.4E-03
Diethyl Phthalate	0	--	--	na	1.2E+05	--	--	na	1.2E+05	--	--	--	--	--	--	--	--	--	--	na	1.2E+05
Di-2-Ethylhexyl Phthalate ^C	0	--	--	na	5.9E+01	--	--	na	5.9E+01	--	--	--	--	--	--	--	--	--	--	na	5.9E+01
2,4-Dimethylphenol	0	--	--	na	2.3E+03	--	--	na	2.3E+03	--	--	--	--	--	--	--	--	--	--	na	2.3E+03
Dimethyl Phthalate	0	--	--	na	2.9E+06	--	--	na	2.9E+06	--	--	--	--	--	--	--	--	--	--	na	2.9E+06
Di-n-Butyl Phthalate	0	--	--	na	1.2E+04	--	--	na	1.2E+04	--	--	--	--	--	--	--	--	--	--	na	1.2E+04
2,4 Dinitrophenol	0	--	--	na	1.4E+04	--	--	na	1.4E+04	--	--	--	--	--	--	--	--	--	--	na	1.4E+04
2-Methyl-4,6-Dinitrophenol	0	--	--	na	7.65E+02	--	--	na	7.7E+02	--	--	--	--	--	--	--	--	--	--	na	7.7E+02
2,4-Dinitrotoluene ^C	0	--	--	na	9.1E+01	--	--	na	9.1E+01	--	--	--	--	--	--	--	--	--	--	na	9.1E+01
Dioxin (2,3,7,8- tetrachlorodibenzo-p-dioxin) (ppq)	0	--	--	na	1.2E-06	--	--	na	na	--	--	--	--	--	--	--	--	--	--	na	na
1,2-Diphenylhydrazine ^C	0	--	--	na	5.4E+00	--	--	na	5.4E+00	--	--	--	--	--	--	--	--	--	--	na	5.4E+00
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	2.2E-01	5.6E-02	na	2.4E+02	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	2.4E+02
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	2.2E-01	5.6E-02	na	2.4E+02	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	2.4E+02
Endosulfan Sulfate	0	--	--	na	2.4E+02	--	--	na	2.4E+02	--	--	--	--	--	--	--	--	--	--	na	2.4E+02
Endrin	0	8.6E-02	3.6E-02	na	8.1E-01	8.6E-02	3.6E-02	na	8.1E-01	--	--	--	--	--	--	--	--	8.6E-02	3.6E-02	na	8.1E-01
Endrin Aldehyde	0	--	--	na	8.1E-01	--	--	na	8.1E-01	--	--	--	--	--	--	--	--	--	--	na	8.1E-01

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.9E+04	--	--	na	2.9E+04	--	--	--	--	--	--	--	--	--	--	na	2.9E+04
Fluoranthene	0	--	--	na	3.7E+02	--	--	na	3.7E+02	--	--	--	--	--	--	--	--	--	--	na	3.7E+02
Fluorene	0	--	--	na	1.4E+04	--	--	na	1.4E+04	--	--	--	--	--	--	--	--	--	--	na	1.4E+04
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	1.0E-02	na	--	--	--	--	--	--	--	--	--	--	1.0E-02	na	--
Heptachlor ^C	0	5.2E-01	3.8E-03	na	2.1E-03	5.2E-01	3.8E-03	na	2.1E-03	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	2.1E-03
Heptachlor Epoxide ^C	0	5.2E-01	3.8E-03	na	1.1E-03	5.2E-01	3.8E-03	na	1.1E-03	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	1.1E-03
Hexachlorobenzene ^C	0	--	--	na	7.7E-03	--	--	na	7.7E-03	--	--	--	--	--	--	--	--	--	--	na	7.7E-03
Hexachlorobutadiene ^C	0	--	--	na	5.0E+02	--	--	na	5.0E+02	--	--	--	--	--	--	--	--	--	--	na	5.0E+02
Hexachlorocyclohexane Alpha-BHC ^C	0	--	--	na	1.3E-01	--	--	na	1.3E-01	--	--	--	--	--	--	--	--	--	--	na	1.3E-01
Hexachlorocyclohexane Beta-BHC ^C	0	--	--	na	4.6E-01	--	--	na	4.6E-01	--	--	--	--	--	--	--	--	--	--	na	4.6E-01
Hexachlorocyclohexane Gamma-BHC ^C (Lindane)	0	9.5E-01	na	na	6.3E-01	9.5E-01	--	na	6.3E-01	--	--	--	--	--	--	--	--	9.5E-01	--	na	6.3E-01
Hexachlorocyclopentadiene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	--	--	na	1.7E+04
Hexachloroethane ^C	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	--	--	na	8.9E+01
Hydrogen Sulfide	0	--	2.0E+00	na	--	--	2.0E+00	na	--	--	--	--	--	--	--	--	--	--	2.0E+00	na	--
Indeno (1,2,3-cd) pyrene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Iron	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Isophorone ^C	0	--	--	na	2.6E+04	--	--	na	2.6E+04	--	--	--	--	--	--	--	--	--	--	na	2.6E+04
Kepone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Lead	0	4.9E+01	5.6E+00	na	--	4.9E+01	5.6E+00	na	--	--	--	--	--	--	--	--	--	4.9E+01	5.6E+00	na	--
Malathion	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	na	5.1E-02	1.4E+00	7.7E-01	na	5.1E-02	--	--	--	--	--	--	--	--	1.4E+00	7.7E-01	na	5.1E-02
Methyl Bromide	0	--	--	na	4.0E+03	--	--	na	4.0E+03	--	--	--	--	--	--	--	--	--	--	na	4.0E+03
Methoxychlor	0	--	3.0E-02	na	--	--	3.0E-02	na	--	--	--	--	--	--	--	--	--	--	3.0E-02	na	--
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Monochlorobenzene	0	--	--	na	2.1E+04	--	--	na	2.1E+04	--	--	--	--	--	--	--	--	--	--	na	2.1E+04
Nickel	0	1.0E+02	1.1E+01	na	4.6E+03	1.0E+02	1.1E+01	na	4.6E+03	--	--	--	--	--	--	--	--	1.0E+02	1.1E+01	na	4.6E+03
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Nitrobenzene	0	--	--	na	1.9E+03	--	--	na	1.9E+03	--	--	--	--	--	--	--	--	--	--	na	1.9E+03
N-Nitrosodimethylamine ^C	0	--	--	na	8.1E+01	--	--	na	8.1E+01	--	--	--	--	--	--	--	--	--	--	na	8.1E+01
N-Nitrosodiphenylamine ^C	0	--	--	na	1.6E+02	--	--	na	1.6E+02	--	--	--	--	--	--	--	--	--	--	na	1.6E+02
N-Nitrosodi-n-propylamine ^C	0	--	--	na	1.4E+01	--	--	na	1.4E+01	--	--	--	--	--	--	--	--	--	--	na	1.4E+01
Parathion	0	6.5E-02	1.3E-02	na	--	6.5E-02	1.3E-02	na	--	--	--	--	--	--	--	--	--	6.5E-02	1.3E-02	na	--
PCB-1016	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1221	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1232	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1242	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1248	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1254	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1260	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB Total ^C	0	--	--	na	1.7E-03	--	--	na	1.7E-03	--	--	--	--	--	--	--	--	--	--	na	1.7E-03

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Pentachlorophenol ^C	0	7.7E-03	5.9E-03	na	8.2E+01	7.7E-03	5.9E-03	na	8.2E+01	--	--	--	--	--	--	--	--	7.7E-03	5.9E-03	na	8.2E+01
Phenol	0	--	--	na	4.6E+06	--	--	na	4.6E+06	--	--	--	--	--	--	--	--	--	--	na	4.6E+06
Pyrene	0	--	--	na	1.1E+04	--	--	na	1.1E+04	--	--	--	--	--	--	--	--	--	--	na	1.1E+04
Radionuclides (pCi/l except Beta/Photon)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Gross Alpha Activity Beta and Photon Activity (mrem/yr)	0	--	--	na	1.5E+01	--	--	na	1.5E+01	--	--	--	--	--	--	--	--	--	--	na	1.5E+01
Strontium-90	0	--	--	na	8.0E+00	--	--	na	8.0E+00	--	--	--	--	--	--	--	--	--	--	na	8.0E+00
Tritium	0	--	--	na	2.0E+04	--	--	na	2.0E+04	--	--	--	--	--	--	--	--	--	--	na	2.0E+04
Selenium	0	2.0E+01	5.0E+00	na	1.1E+04	2.0E+01	5.0E+00	na	1.1E+04	--	--	--	--	--	--	--	--	2.0E+01	5.0E+00	na	1.1E+04
Silver	0	1.0E+00	--	na	--	1.0E+00	--	na	--	--	--	--	--	--	--	--	--	1.0E+00	--	na	--
Sulfate	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,1,2,2-Tetrachloroethane ^C	0	--	--	na	1.1E+02	--	--	na	1.1E+02	--	--	--	--	--	--	--	--	--	--	na	1.1E+02
Tetrachloroethylene ^C	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	--	--	na	8.9E+01
Thallium	0	--	--	na	6.3E+00	--	--	na	6.3E+00	--	--	--	--	--	--	--	--	--	--	na	6.3E+00
Toluene	0	--	--	na	2.0E+05	--	--	na	2.0E+05	--	--	--	--	--	--	--	--	--	--	na	2.0E+05
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Toxaphene ^C	0	7.3E-01	2.0E-04	na	7.5E-03	7.3E-01	2.0E-04	na	7.5E-03	--	--	--	--	--	--	--	--	7.3E-01	2.0E-04	na	7.5E-03
Tributyltin	0	4.6E-01	6.3E-02	na	--	4.6E-01	6.3E-02	na	--	--	--	--	--	--	--	--	--	4.6E-01	6.3E-02	na	--
1,2,4-Trichlorobenzene	0	--	--	na	9.4E+02	--	--	na	9.4E+02	--	--	--	--	--	--	--	--	--	--	na	9.4E+02
1,1,2-Trichloroethane ^C	0	--	--	na	4.2E+02	--	--	na	4.2E+02	--	--	--	--	--	--	--	--	--	--	na	4.2E+02
Trichloroethylene ^C	0	--	--	na	8.1E+02	--	--	na	8.1E+02	--	--	--	--	--	--	--	--	--	--	na	8.1E+02
2,4,6-Trichlorophenol ^C	0	--	--	na	6.5E+01	--	--	na	6.5E+01	--	--	--	--	--	--	--	--	--	--	na	6.5E+01
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Vinyl Chloride ^C	0	--	--	na	6.1E+01	--	--	na	6.1E+01	--	--	--	--	--	--	--	--	--	--	na	6.1E+01
Zinc	0	6.5E+01	6.6E+01	na	6.9E+04	6.5E+01	6.6E+01	na	6.9E+04	--	--	--	--	--	--	--	--	6.5E+01	6.6E+01	na	6.9E+04

Notes:

- All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
- Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
- Metals measured as Dissolved, unless specified otherwise
- "C" indicates a carcinogenic parameter
- Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
Antidegradation WLAs are based upon a complete mix.
- Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
= (0.1(WQC - background conc.) + background conc.) for human health
- WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens, Harmonic Mean for Carcinogens, and Annual Average for Dioxin. Mixing ratios may be substituted for stream flows where appropriate.

Metal	Target Value (SSTV)	Note: do not use QL's lower than the minimum QL's provided in agency guidance
Antimony	4.3E+03	
Arsenic	9.0E+01	
Barium	na	
Cadmium	3.9E-01	
Chromium III	2.5E+01	
Chromium VI	6.4E+00	
Copper	2.8E+00	
Iron	na	
Lead	3.4E+00	
Manganese	na	
Mercury	5.1E-02	
Nickel	6.8E+00	
Selenium	3.0E+00	
Silver	4.2E-01	
Zinc	2.6E+01	

FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Washington Dulles International Airport

Permit No.: VA0089541

Receiving Stream: Dead Run

Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information

Mean Hardness (as CaCO₃) = mg/L
 90% Temperature (Annual) = deg C
 90% Temperature (Wet season) = deg C
 90% Maximum pH = SU
 10% Maximum pH = SU
 Tier Designation (1 or 2) = 1
 Public Water Supply (PWS) Y/N? = n
 Trout Present Y/N? = n
 Early Life Stages Present Y/N? = y

Stream Flows

1Q10 (Annual) = 0 MGD
 7Q10 (Annual) = 0 MGD
 30Q10 (Annual) = 0 MGD
 1Q10 (Wet season) = 0 MGD
 30Q10 (Wet season) = 0 MGD
 30Q5 = 0 MGD
 Harmonic Mean = 0 MGD
 Annual Average = 0 MGD

Mixing Information

Annual - 1Q10 Mix = 0 %
 - 7Q10 Mix = 0 %
 - 30Q10 Mix = 0 %
 Wet Season - 1Q10 Mix = 0 %
 - 30Q10 Mix = 0 %

Effluent Information

Mean Hardness (as CaCO₃) = 50 mg/L
 90% Temp (Annual) = deg C
 90% Temp (Wet season) = 25 deg C
 90% Maximum pH = 8 SU
 10% Maximum pH = SU
 Discharge Flow = 4.33 MGD

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Acenaphthene	0	--	--	na	2.7E+03	--	--	na	2.7E+03	--	--	--	--	--	--	--	--	--	--	na	2.7E+03
Acrolein	0	--	--	na	7.8E+02	--	--	na	7.8E+02	--	--	--	--	--	--	--	--	--	--	na	7.8E+02
Acrylonitrile ^C	0	--	--	na	6.6E+00	--	--	na	6.6E+00	--	--	--	--	--	--	--	--	--	--	na	6.6E+00
Aldrin ^C	0	3.0E+00	--	na	1.4E-03	3.0E+00	--	na	1.4E-03	--	--	--	--	--	--	--	--	3.0E+00	--	na	1.4E-03
Ammonia-N (mg/l) (Yearly)	0	8.41E+00	2.43E+00	na	--	8.4E+00	2.4E+00	na	--	--	--	--	--	--	--	--	--	8.4E+00	2.4E+00	na	--
Ammonia-N (mg/l) (High Flow)	0	8.41E+00	1.24E+00	na	--	8.4E+00	1.2E+00	na	--	--	--	--	--	--	--	--	--	8.4E+00	1.2E+00	na	--
Anthracene	0	--	--	na	1.1E+05	--	--	na	1.1E+05	--	--	--	--	--	--	--	--	--	--	na	1.1E+05
Antimony	0	--	--	na	4.3E+03	--	--	na	4.3E+03	--	--	--	--	--	--	--	--	--	--	na	4.3E+03
Arsenic	0	3.4E+02	1.5E+02	na	--	3.4E+02	1.5E+02	na	--	--	--	--	--	--	--	--	--	3.4E+02	1.5E+02	na	--
Barium	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Benzene ^C	0	--	--	na	7.1E+02	--	--	na	7.1E+02	--	--	--	--	--	--	--	--	--	--	na	7.1E+02
Benzidine ^C	0	--	--	na	5.4E-03	--	--	na	5.4E-03	--	--	--	--	--	--	--	--	--	--	na	5.4E-03
Benzo (a) anthracene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Benzo (b) fluoranthene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Benzo (k) fluoranthene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Benzo (a) pyrene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Bis2-Chloroethyl Ether	0	--	--	na	1.4E+01	--	--	na	1.4E+01	--	--	--	--	--	--	--	--	--	--	na	1.4E+01
Bis2-Chloroisopropyl Ether	0	--	--	na	1.7E+05	--	--	na	1.7E+05	--	--	--	--	--	--	--	--	--	--	na	1.7E+05
Bromoform ^C	0	--	--	na	3.6E+03	--	--	na	3.6E+03	--	--	--	--	--	--	--	--	--	--	na	3.6E+03
Butylbenzylphthalate	0	--	--	na	5.2E+03	--	--	na	5.2E+03	--	--	--	--	--	--	--	--	--	--	na	5.2E+03
Cadmium	0	1.8E+00	6.6E-01	na	--	1.8E+00	6.6E-01	na	--	--	--	--	--	--	--	--	--	1.8E+00	6.6E-01	na	--
Carbon Tetrachloride ^C	0	--	--	na	4.4E+01	--	--	na	4.4E+01	--	--	--	--	--	--	--	--	--	--	na	4.4E+01
Chlordane ^C	0	2.4E+00	4.3E-03	na	2.2E-02	2.4E+00	4.3E-03	na	2.2E-02	--	--	--	--	--	--	--	--	2.4E+00	4.3E-03	na	2.2E-02
Chloride	0	8.6E+05	2.3E+05	na	--	8.6E+05	2.3E+05	na	--	--	--	--	--	--	--	--	--	8.6E+05	2.3E+05	na	--
TRC	0	1.9E+01	1.1E+01	na	--	1.9E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.9E+01	1.1E+01	na	--
Chlorobenzene	0	--	--	na	2.1E+04	--	--	na	2.1E+04	--	--	--	--	--	--	--	--	--	--	na	2.1E+04

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane ^C	0	--	--	na	3.4E+02	--	--	na	3.4E+02	--	--	--	--	--	--	--	--	--	--	na	3.4E+02
Chloroform ^C	0	--	--	na	2.9E+04	--	--	na	2.9E+04	--	--	--	--	--	--	--	--	--	--	na	2.9E+04
2-Chloronaphthalene	0	--	--	na	4.3E+03	--	--	na	4.3E+03	--	--	--	--	--	--	--	--	--	--	na	4.3E+03
2-Chlorophenol	0	--	--	na	4.0E+02	--	--	na	4.0E+02	--	--	--	--	--	--	--	--	--	--	na	4.0E+02
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	8.3E-02	4.1E-02	na	--	--	--	--	--	--	--	--	--	8.3E-02	4.1E-02	na	--
Chromium III	0	3.2E+02	4.2E+01	na	--	3.2E+02	4.2E+01	na	--	--	--	--	--	--	--	--	--	3.2E+02	4.2E+01	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.6E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.6E+01	1.1E+01	na	--
Chromium, Total	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Chrysene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Copper	0	7.0E+00	5.0E+00	na	--	7.0E+00	5.0E+00	na	--	--	--	--	--	--	--	--	--	7.0E+00	5.0E+00	na	--
Cyanide	0	2.2E+01	5.2E+00	na	2.2E+05	2.2E+01	5.2E+00	na	2.2E+05	--	--	--	--	--	--	--	--	2.2E+01	5.2E+00	na	2.2E+05
DDD ^C	0	--	--	na	8.4E-03	--	--	na	8.4E-03	--	--	--	--	--	--	--	--	--	--	na	8.4E-03
DDE ^C	0	--	--	na	5.9E-03	--	--	na	5.9E-03	--	--	--	--	--	--	--	--	--	--	na	5.9E-03
DDT ^C	0	1.1E+00	1.0E-03	na	5.9E-03	1.1E+00	1.0E-03	na	5.9E-03	--	--	--	--	--	--	--	--	1.1E+00	1.0E-03	na	5.9E-03
Demeton	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Dibenz(a,h)anthracene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Dibutyl phthalate	0	--	--	na	1.2E+04	--	--	na	1.2E+04	--	--	--	--	--	--	--	--	--	--	na	1.2E+04
Dichloromethane (Methylene Chloride) ^C	0	--	--	na	1.6E+04	--	--	na	1.6E+04	--	--	--	--	--	--	--	--	--	--	na	1.6E+04
1,2-Dichlorobenzene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	--	--	na	1.7E+04
1,3-Dichlorobenzene	0	--	--	na	2.6E+03	--	--	na	2.6E+03	--	--	--	--	--	--	--	--	--	--	na	2.6E+03
1,4-Dichlorobenzene	0	--	--	na	2.6E+03	--	--	na	2.6E+03	--	--	--	--	--	--	--	--	--	--	na	2.6E+03
3,3-Dichlorobenzidine ^C	0	--	--	na	7.7E-01	--	--	na	7.7E-01	--	--	--	--	--	--	--	--	--	--	na	7.7E-01
Dichlorobromomethane ^C	0	--	--	na	4.6E+02	--	--	na	4.6E+02	--	--	--	--	--	--	--	--	--	--	na	4.6E+02
1,2-Dichloroethane ^C	0	--	--	na	9.9E+02	--	--	na	9.9E+02	--	--	--	--	--	--	--	--	--	--	na	9.9E+02
1,1-Dichloroethylene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	--	--	na	1.7E+04
1,2-trans-dichloroethylene	0	--	--	na	1.4E+05	--	--	na	1.4E+05	--	--	--	--	--	--	--	--	--	--	na	1.4E+05
2,4-Dichlorophenol	0	--	--	na	7.9E+02	--	--	na	7.9E+02	--	--	--	--	--	--	--	--	--	--	na	7.9E+02
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,2-Dichloropropane ^C	0	--	--	na	3.9E+02	--	--	na	3.9E+02	--	--	--	--	--	--	--	--	--	--	na	3.9E+02
1,3-Dichloropropene	0	--	--	na	1.7E+03	--	--	na	1.7E+03	--	--	--	--	--	--	--	--	--	--	na	1.7E+03
Dieldrin ^C	0	2.4E-01	5.6E-02	na	1.4E-03	2.4E-01	5.6E-02	na	1.4E-03	--	--	--	--	--	--	--	--	2.4E-01	5.6E-02	na	1.4E-03
Diethyl Phthalate	0	--	--	na	1.2E+05	--	--	na	1.2E+05	--	--	--	--	--	--	--	--	--	--	na	1.2E+05
Di-2-Ethylhexyl Phthalate ^C	0	--	--	na	5.9E+01	--	--	na	5.9E+01	--	--	--	--	--	--	--	--	--	--	na	5.9E+01
2,4-Dimethylphenol	0	--	--	na	2.3E+03	--	--	na	2.3E+03	--	--	--	--	--	--	--	--	--	--	na	2.3E+03
Dimethyl Phthalate	0	--	--	na	2.9E+06	--	--	na	2.9E+06	--	--	--	--	--	--	--	--	--	--	na	2.9E+06
Di-n-Butyl Phthalate	0	--	--	na	1.2E+04	--	--	na	1.2E+04	--	--	--	--	--	--	--	--	--	--	na	1.2E+04
2,4 Dinitrophenol	0	--	--	na	1.4E+04	--	--	na	1.4E+04	--	--	--	--	--	--	--	--	--	--	na	1.4E+04
2-Methyl-4,6-Dinitrophenol	0	--	--	na	7.65E+02	--	--	na	7.7E+02	--	--	--	--	--	--	--	--	--	--	na	7.7E+02
2,4-Dinitrotoluene ^C	0	--	--	na	9.1E+01	--	--	na	9.1E+01	--	--	--	--	--	--	--	--	--	--	na	9.1E+01
Dioxin (2,3,7,8- tetrachlorodibenzo-p-dioxin) (ppq)	0	--	--	na	1.2E-06	--	--	na	na	--	--	--	--	--	--	--	--	--	--	na	na
1,2-Diphenylhydrazine ^C	0	--	--	na	5.4E+00	--	--	na	5.4E+00	--	--	--	--	--	--	--	--	--	--	na	5.4E+00
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	2.2E-01	5.6E-02	na	2.4E+02	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	2.4E+02
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	2.2E-01	5.6E-02	na	2.4E+02	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	2.4E+02
Endosulfan Sulfate	0	--	--	na	2.4E+02	--	--	na	2.4E+02	--	--	--	--	--	--	--	--	--	--	na	2.4E+02
Endrin	0	8.6E-02	3.6E-02	na	8.1E-01	8.6E-02	3.6E-02	na	8.1E-01	--	--	--	--	--	--	--	--	8.6E-02	3.6E-02	na	8.1E-01
Endrin Aldehyde	0	--	--	na	8.1E-01	--	--	na	8.1E-01	--	--	--	--	--	--	--	--	--	--	na	8.1E-01

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.9E+04	--	--	na	2.9E+04	--	--	--	--	--	--	--	--	--	--	na	2.9E+04
Fluoranthene	0	--	--	na	3.7E+02	--	--	na	3.7E+02	--	--	--	--	--	--	--	--	--	--	na	3.7E+02
Fluorene	0	--	--	na	1.4E+04	--	--	na	1.4E+04	--	--	--	--	--	--	--	--	--	--	na	1.4E+04
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	1.0E-02	na	--	--	--	--	--	--	--	--	--	--	1.0E-02	na	--
Heptachlor ^C	0	5.2E-01	3.8E-03	na	2.1E-03	5.2E-01	3.8E-03	na	2.1E-03	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	2.1E-03
Heptachlor Epoxide ^C	0	5.2E-01	3.8E-03	na	1.1E-03	5.2E-01	3.8E-03	na	1.1E-03	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	1.1E-03
Hexachlorobenzene ^C	0	--	--	na	7.7E-03	--	--	na	7.7E-03	--	--	--	--	--	--	--	--	--	--	na	7.7E-03
Hexachlorobutadiene ^C	0	--	--	na	5.0E+02	--	--	na	5.0E+02	--	--	--	--	--	--	--	--	--	--	na	5.0E+02
Hexachlorocyclohexane Alpha-BHC ^C	0	--	--	na	1.3E-01	--	--	na	1.3E-01	--	--	--	--	--	--	--	--	--	--	na	1.3E-01
Hexachlorocyclohexane Beta-BHC ^C	0	--	--	na	4.6E-01	--	--	na	4.6E-01	--	--	--	--	--	--	--	--	--	--	na	4.6E-01
Hexachlorocyclohexane Gamma-BHC ^C (Lindane)	0	9.5E-01	na	na	6.3E-01	9.5E-01	--	na	6.3E-01	--	--	--	--	--	--	--	--	9.5E-01	--	na	6.3E-01
Hexachlorocyclopentadiene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	--	--	na	1.7E+04
Hexachloroethane ^C	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	--	--	na	8.9E+01
Hydrogen Sulfide	0	--	2.0E+00	na	--	--	2.0E+00	na	--	--	--	--	--	--	--	--	--	--	2.0E+00	na	--
Indeno (1,2,3-cd) pyrene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Iron	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Isophorone ^C	0	--	--	na	2.6E+04	--	--	na	2.6E+04	--	--	--	--	--	--	--	--	--	--	na	2.6E+04
Kepone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Lead	0	4.9E+01	5.6E+00	na	--	4.9E+01	5.6E+00	na	--	--	--	--	--	--	--	--	--	4.9E+01	5.6E+00	na	--
Malathion	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	na	5.1E-02	1.4E+00	7.7E-01	na	5.1E-02	--	--	--	--	--	--	--	--	1.4E+00	7.7E-01	na	5.1E-02
Methyl Bromide	0	--	--	na	4.0E+03	--	--	na	4.0E+03	--	--	--	--	--	--	--	--	--	--	na	4.0E+03
Methoxychlor	0	--	3.0E-02	na	--	--	3.0E-02	na	--	--	--	--	--	--	--	--	--	--	3.0E-02	na	--
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Monochlorobenzene	0	--	--	na	2.1E+04	--	--	na	2.1E+04	--	--	--	--	--	--	--	--	--	--	na	2.1E+04
Nickel	0	1.0E+02	1.1E+01	na	4.6E+03	1.0E+02	1.1E+01	na	4.6E+03	--	--	--	--	--	--	--	--	1.0E+02	1.1E+01	na	4.6E+03
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Nitrobenzene	0	--	--	na	1.9E+03	--	--	na	1.9E+03	--	--	--	--	--	--	--	--	--	--	na	1.9E+03
N-Nitrosodimethylamine ^C	0	--	--	na	8.1E+01	--	--	na	8.1E+01	--	--	--	--	--	--	--	--	--	--	na	8.1E+01
N-Nitrosodiphenylamine ^C	0	--	--	na	1.6E+02	--	--	na	1.6E+02	--	--	--	--	--	--	--	--	--	--	na	1.6E+02
N-Nitrosodi-n-propylamine ^C	0	--	--	na	1.4E+01	--	--	na	1.4E+01	--	--	--	--	--	--	--	--	--	--	na	1.4E+01
Parathion	0	6.5E-02	1.3E-02	na	--	6.5E-02	1.3E-02	na	--	--	--	--	--	--	--	--	--	6.5E-02	1.3E-02	na	--
PCB-1016	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1221	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1232	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1242	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1248	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1254	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1260	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB Total ^C	0	--	--	na	1.7E-03	--	--	na	1.7E-03	--	--	--	--	--	--	--	--	--	--	na	1.7E-03

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Pentachlorophenol ^C	0	7.7E-03	5.9E-03	na	8.2E+01	7.7E-03	5.9E-03	na	8.2E+01	--	--	--	--	--	--	--	--	7.7E-03	5.9E-03	na	8.2E+01
Phenol	0	--	--	na	4.6E+06	--	--	na	4.6E+06	--	--	--	--	--	--	--	--	--	--	na	4.6E+06
Pyrene	0	--	--	na	1.1E+04	--	--	na	1.1E+04	--	--	--	--	--	--	--	--	--	--	na	1.1E+04
Radionuclides (pCi/l except Beta/Photon)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Gross Alpha Activity Beta and Photon Activity (mrem/yr)	0	--	--	na	1.5E+01	--	--	na	1.5E+01	--	--	--	--	--	--	--	--	--	--	na	1.5E+01
Strontium-90	0	--	--	na	4.0E+00	--	--	na	4.0E+00	--	--	--	--	--	--	--	--	--	--	na	4.0E+00
Tritium	0	--	--	na	8.0E+00	--	--	na	8.0E+00	--	--	--	--	--	--	--	--	--	--	na	8.0E+00
Selenium	0	--	--	na	2.0E+04	--	--	na	2.0E+04	--	--	--	--	--	--	--	--	--	--	na	2.0E+04
Silver	0	2.0E+01	5.0E+00	na	1.1E+04	2.0E+01	5.0E+00	na	1.1E+04	--	--	--	--	--	--	--	--	2.0E+01	5.0E+00	na	1.1E+04
Sulfate	0	1.0E+00	--	na	--	1.0E+00	--	na	--	--	--	--	--	--	--	--	--	1.0E+00	--	na	--
1,1,2,2-Tetrachloroethane ^C	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Tetrachloroethylene ^C	0	--	--	na	1.1E+02	--	--	na	1.1E+02	--	--	--	--	--	--	--	--	--	--	na	1.1E+02
Thallium	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	--	--	na	8.9E+01
Toluene	0	--	--	na	6.3E+00	--	--	na	6.3E+00	--	--	--	--	--	--	--	--	--	--	na	6.3E+00
Total dissolved solids	0	--	--	na	2.0E+05	--	--	na	2.0E+05	--	--	--	--	--	--	--	--	--	--	na	2.0E+05
Toxaphene ^C	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Tributyltin	0	7.3E-01	2.0E-04	na	7.5E-03	7.3E-01	2.0E-04	na	7.5E-03	--	--	--	--	--	--	--	--	7.3E-01	2.0E-04	na	7.5E-03
1,2,4-Trichlorobenzene	0	4.6E-01	6.3E-02	na	--	4.6E-01	6.3E-02	na	--	--	--	--	--	--	--	--	--	4.6E-01	6.3E-02	na	--
1,1,2-Trichloroethane ^C	0	--	--	na	9.4E+02	--	--	na	9.4E+02	--	--	--	--	--	--	--	--	--	--	na	9.4E+02
Trichloroethylene ^C	0	--	--	na	4.2E+02	--	--	na	4.2E+02	--	--	--	--	--	--	--	--	--	--	na	4.2E+02
2,4,6-Trichlorophenol ^C	0	--	--	na	8.1E+02	--	--	na	8.1E+02	--	--	--	--	--	--	--	--	--	--	na	8.1E+02
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	6.5E+01	--	--	na	6.5E+01	--	--	--	--	--	--	--	--	--	--	na	6.5E+01
Vinyl Chloride ^C	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Zinc	0	--	--	na	6.1E+01	--	--	na	6.1E+01	--	--	--	--	--	--	--	--	--	--	na	6.1E+01
	0	6.5E+01	6.6E+01	na	6.9E+04	6.5E+01	6.6E+01	na	6.9E+04	--	--	--	--	--	--	--	--	6.5E+01	6.6E+01	na	6.9E+04

Notes:

- All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
- Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
- Metals measured as Dissolved, unless specified otherwise
- "C" indicates a carcinogenic parameter
- Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
Antidegradation WLAs are based upon a complete mix.
- Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
= (0.1(WQC - background conc.) + background conc.) for human health
- WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens, Harmonic Mean for Carcinogens, and Annual Average for Dioxin. Mixing ratios may be substituted for stream flows where appropriate.

Metal	Target Value (SSTV)	Note: do not use QL's lower than the minimum QL's provided in agency guidance
Antimony	4.3E+03	
Arsenic	9.0E+01	
Barium	na	
Cadmium	3.9E-01	
Chromium III	2.5E+01	
Chromium VI	6.4E+00	
Copper	2.8E+00	
Iron	na	
Lead	3.4E+00	
Manganese	na	
Mercury	5.1E-02	
Nickel	6.8E+00	
Selenium	3.0E+00	
Silver	4.2E-01	
Zinc	2.6E+01	

FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Washington Dulles International Airport

Permit No.: VA0089541

Receiving Stream: UT to Horsepen Run

Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information

Mean Hardness (as CaCO3) =	mg/L
90% Temperature (Annual) =	deg C
90% Temperature (Wet season) =	deg C
90% Maximum pH =	SU
10% Maximum pH =	SU
Tier Designation (1 or 2) =	1
Public Water Supply (PWS) Y/N? =	n
Trout Present Y/N? =	n
Early Life Stages Present Y/N? =	y

Stream Flows

1Q10 (Annual) =	0 MGD
7Q10 (Annual) =	0 MGD
30Q10 (Annual) =	0 MGD
1Q10 (Wet season) =	0 MGD
30Q10 (Wet season) =	0 MGD
30Q5 =	0 MGD
Harmonic Mean =	0 MGD
Annual Average =	0 MGD

Mixing Information

Annual - 1Q10 Mix =	0 %
- 7Q10 Mix =	0 %
- 30Q10 Mix =	0 %
Wet Season - 1Q10 Mix =	0 %
- 30Q10 Mix =	0 %

Effluent Information

Mean Hardness (as CaCO3) =	50 mg/L
90% Temp (Annual) =	deg C
90% Temp (Wet season) =	25 deg C
90% Maximum pH =	8 SU
10% Maximum pH =	SU
Discharge Flow =	10.2 MGD

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Acenaphthene	0	--	--	na	2.7E+03	--	--	na	2.7E+03	--	--	--	--	--	--	--	--	--	--	na	2.7E+03
Acrolein	0	--	--	na	7.8E+02	--	--	na	7.8E+02	--	--	--	--	--	--	--	--	--	--	na	7.8E+02
Acrylonitrile ^c	0	--	--	na	6.6E+00	--	--	na	6.6E+00	--	--	--	--	--	--	--	--	--	--	na	6.6E+00
Aldrin ^c	0	3.0E+00	--	na	1.4E-03	3.0E+00	--	na	1.4E-03	--	--	--	--	--	--	--	--	3.0E+00	--	na	1.4E-03
Ammonia-N (mg/l) (Yearly)	0	8.41E+00	2.43E+00	na	--	8.4E+00	2.4E+00	na	--	--	--	--	--	--	--	--	--	8.4E+00	2.4E+00	na	--
Ammonia-N (mg/l) (High Flow)	0	8.41E+00	1.24E+00	na	--	8.4E+00	1.2E+00	na	--	--	--	--	--	--	--	--	--	8.4E+00	1.2E+00	na	--
Anthracene	0	--	--	na	1.1E+05	--	--	na	1.1E+05	--	--	--	--	--	--	--	--	--	--	na	1.1E+05
Antimony	0	--	--	na	4.3E+03	--	--	na	4.3E+03	--	--	--	--	--	--	--	--	--	--	na	4.3E+03
Arsenic	0	3.4E+02	1.5E+02	na	--	3.4E+02	1.5E+02	na	--	--	--	--	--	--	--	--	--	3.4E+02	1.5E+02	na	--
Barium	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Benzene ^c	0	--	--	na	7.1E+02	--	--	na	7.1E+02	--	--	--	--	--	--	--	--	--	--	na	7.1E+02
Benzidine ^c	0	--	--	na	5.4E-03	--	--	na	5.4E-03	--	--	--	--	--	--	--	--	--	--	na	5.4E-03
Benzo (a) anthracene ^c	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Benzo (b) fluoranthene ^c	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Benzo (k) fluoranthene ^c	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Benzo (a) pyrene ^c	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Bis(2-Chloroethyl) Ether	0	--	--	na	1.4E+01	--	--	na	1.4E+01	--	--	--	--	--	--	--	--	--	--	na	1.4E+01
Bis(2-Chloroisopropyl) Ether	0	--	--	na	1.7E+05	--	--	na	1.7E+05	--	--	--	--	--	--	--	--	--	--	na	1.7E+05
Bromoform ^c	0	--	--	na	3.6E+03	--	--	na	3.6E+03	--	--	--	--	--	--	--	--	--	--	na	3.6E+03
Butylbenzylphthalate	0	--	--	na	5.2E+03	--	--	na	5.2E+03	--	--	--	--	--	--	--	--	--	--	na	5.2E+03
Cadmium	0	1.8E+00	6.6E-01	na	--	1.8E+00	6.6E-01	na	--	--	--	--	--	--	--	--	--	1.8E+00	6.6E-01	na	--
Carbon Tetrachloride ^c	0	--	--	na	4.4E+01	--	--	na	4.4E+01	--	--	--	--	--	--	--	--	--	--	na	4.4E+01
Chlordane ^c	0	2.4E+00	4.3E-03	na	2.2E-02	2.4E+00	4.3E-03	na	2.2E-02	--	--	--	--	--	--	--	--	2.4E+00	4.3E-03	na	2.2E-02
Chloride	0	8.6E+05	2.3E+05	na	--	8.6E+05	2.3E+05	na	--	--	--	--	--	--	--	--	--	8.6E+05	2.3E+05	na	--
TRC	0	1.9E+01	1.1E+01	na	--	1.9E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.9E+01	1.1E+01	na	--
Chlorobenzene	0	--	--	na	2.1E+04	--	--	na	2.1E+04	--	--	--	--	--	--	--	--	--	--	na	2.1E+04

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane ^C	0	--	--	na	3.4E+02	--	--	na	3.4E+02	--	--	--	--	--	--	--	--	--	--	na	3.4E+02
Chloroform ^C	0	--	--	na	2.9E+04	--	--	na	2.9E+04	--	--	--	--	--	--	--	--	--	--	na	2.9E+04
2-Chloronaphthalene	0	--	--	na	4.3E+03	--	--	na	4.3E+03	--	--	--	--	--	--	--	--	--	--	na	4.3E+03
2-Chlorophenol	0	--	--	na	4.0E+02	--	--	na	4.0E+02	--	--	--	--	--	--	--	--	--	--	na	4.0E+02
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	8.3E-02	4.1E-02	na	--	--	--	--	--	--	--	--	--	8.3E-02	4.1E-02	na	--
Chromium III	0	3.2E+02	4.2E+01	na	--	3.2E+02	4.2E+01	na	--	--	--	--	--	--	--	--	--	3.2E+02	4.2E+01	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.6E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.6E+01	1.1E+01	na	--
Chromium, Total	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Chrysene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Copper	0	7.0E+00	5.0E+00	na	--	7.0E+00	5.0E+00	na	--	--	--	--	--	--	--	--	--	7.0E+00	5.0E+00	na	--
Cyanide	0	2.2E+01	5.2E+00	na	2.2E+05	2.2E+01	5.2E+00	na	2.2E+05	--	--	--	--	--	--	--	--	2.2E+01	5.2E+00	na	2.2E+05
DDD ^C	0	--	--	na	8.4E-03	--	--	na	8.4E-03	--	--	--	--	--	--	--	--	--	--	na	8.4E-03
DDE ^C	0	--	--	na	5.9E-03	--	--	na	5.9E-03	--	--	--	--	--	--	--	--	--	--	na	5.9E-03
DDT ^C	0	1.1E+00	1.0E-03	na	5.9E-03	1.1E+00	1.0E-03	na	5.9E-03	--	--	--	--	--	--	--	--	1.1E+00	1.0E-03	na	5.9E-03
Demeton	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Dibenz(a,h)anthracene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Dibutyl phthalate	0	--	--	na	1.2E+04	--	--	na	1.2E+04	--	--	--	--	--	--	--	--	--	--	na	1.2E+04
Dichloromethane (Methylene Chloride) ^C	0	--	--	na	1.6E+04	--	--	na	1.6E+04	--	--	--	--	--	--	--	--	--	--	na	1.6E+04
1,2-Dichlorobenzene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	--	--	na	1.7E+04
1,3-Dichlorobenzene	0	--	--	na	2.6E+03	--	--	na	2.6E+03	--	--	--	--	--	--	--	--	--	--	na	2.6E+03
1,4-Dichlorobenzene	0	--	--	na	2.6E+03	--	--	na	2.6E+03	--	--	--	--	--	--	--	--	--	--	na	2.6E+03
3,3-Dichlorobenzidine ^C	0	--	--	na	7.7E-01	--	--	na	7.7E-01	--	--	--	--	--	--	--	--	--	--	na	7.7E-01
Dichlorobromomethane ^C	0	--	--	na	4.6E+02	--	--	na	4.6E+02	--	--	--	--	--	--	--	--	--	--	na	4.6E+02
1,2-Dichloroethane ^C	0	--	--	na	9.9E+02	--	--	na	9.9E+02	--	--	--	--	--	--	--	--	--	--	na	9.9E+02
1,1-Dichloroethylene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	--	--	na	1.7E+04
1,2-trans-dichloroethylene	0	--	--	na	1.4E+05	--	--	na	1.4E+05	--	--	--	--	--	--	--	--	--	--	na	1.4E+05
2,4-Dichlorophenol	0	--	--	na	7.9E+02	--	--	na	7.9E+02	--	--	--	--	--	--	--	--	--	--	na	7.9E+02
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,2-Dichloropropane ^C	0	--	--	na	3.9E+02	--	--	na	3.9E+02	--	--	--	--	--	--	--	--	--	--	na	3.9E+02
1,3-Dichloropropene	0	--	--	na	1.7E+03	--	--	na	1.7E+03	--	--	--	--	--	--	--	--	--	--	na	1.7E+03
Dieldrin ^C	0	2.4E-01	5.6E-02	na	1.4E-03	2.4E-01	5.6E-02	na	1.4E-03	--	--	--	--	--	--	--	--	2.4E-01	5.6E-02	na	1.4E-03
Diethyl Phthalate	0	--	--	na	1.2E+05	--	--	na	1.2E+05	--	--	--	--	--	--	--	--	--	--	na	1.2E+05
Di-2-Ethylhexyl Phthalate ^C	0	--	--	na	5.9E+01	--	--	na	5.9E+01	--	--	--	--	--	--	--	--	--	--	na	5.9E+01
2,4-Dimethylphenol	0	--	--	na	2.3E+03	--	--	na	2.3E+03	--	--	--	--	--	--	--	--	--	--	na	2.3E+03
Dimethyl Phthalate	0	--	--	na	2.9E+06	--	--	na	2.9E+06	--	--	--	--	--	--	--	--	--	--	na	2.9E+06
Di-n-Butyl Phthalate	0	--	--	na	1.2E+04	--	--	na	1.2E+04	--	--	--	--	--	--	--	--	--	--	na	1.2E+04
2,4 Dinitrophenol	0	--	--	na	1.4E+04	--	--	na	1.4E+04	--	--	--	--	--	--	--	--	--	--	na	1.4E+04
2-Methyl-4,6-Dinitrophenol	0	--	--	na	7.65E+02	--	--	na	7.7E+02	--	--	--	--	--	--	--	--	--	--	na	7.7E+02
2,4-Dinitrotoluene ^C	0	--	--	na	9.1E+01	--	--	na	9.1E+01	--	--	--	--	--	--	--	--	--	--	na	9.1E+01
Dioxin (2,3,7,8- tetrachlorodibenzo-p-dioxin) (ppq)	0	--	--	na	1.2E-06	--	--	na	na	--	--	--	--	--	--	--	--	--	--	na	na
1,2-Diphenylhydrazine ^C	0	--	--	na	5.4E+00	--	--	na	5.4E+00	--	--	--	--	--	--	--	--	--	--	na	5.4E+00
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	2.2E-01	5.6E-02	na	2.4E+02	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	2.4E+02
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	2.2E-01	5.6E-02	na	2.4E+02	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	2.4E+02
Endosulfan Sulfate	0	--	--	na	2.4E+02	--	--	na	2.4E+02	--	--	--	--	--	--	--	--	--	--	na	2.4E+02
Endrin	0	8.6E-02	3.6E-02	na	8.1E-01	8.6E-02	3.6E-02	na	8.1E-01	--	--	--	--	--	--	--	--	8.6E-02	3.6E-02	na	8.1E-01
Endrin Aldehyde	0	--	--	na	8.1E-01	--	--	na	8.1E-01	--	--	--	--	--	--	--	--	--	--	na	8.1E-01

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.9E+04	--	--	na	2.9E+04	--	--	--	--	--	--	--	--	--	--	na	2.9E+04
Fluoranthene	0	--	--	na	3.7E+02	--	--	na	3.7E+02	--	--	--	--	--	--	--	--	--	--	na	3.7E+02
Fluorene	0	--	--	na	1.4E+04	--	--	na	1.4E+04	--	--	--	--	--	--	--	--	--	--	na	1.4E+04
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	1.0E-02	na	--	--	--	--	--	--	--	--	--	--	1.0E-02	na	--
Heptachlor ^C	0	5.2E-01	3.8E-03	na	2.1E-03	5.2E-01	3.8E-03	na	2.1E-03	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	2.1E-03
Heptachlor Epoxide ^C	0	5.2E-01	3.8E-03	na	1.1E-03	5.2E-01	3.8E-03	na	1.1E-03	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	1.1E-03
Hexachlorobenzene ^C	0	--	--	na	7.7E-03	--	--	na	7.7E-03	--	--	--	--	--	--	--	--	--	--	na	7.7E-03
Hexachlorobutadiene ^C	0	--	--	na	5.0E+02	--	--	na	5.0E+02	--	--	--	--	--	--	--	--	--	--	na	5.0E+02
Hexachlorocyclohexane Alpha-BHC ^C	0	--	--	na	1.3E-01	--	--	na	1.3E-01	--	--	--	--	--	--	--	--	--	--	na	1.3E-01
Hexachlorocyclohexane Beta-BHC ^C	0	--	--	na	4.6E-01	--	--	na	4.6E-01	--	--	--	--	--	--	--	--	--	--	na	4.6E-01
Hexachlorocyclohexane Gamma-BHC ^C (Lindane)	0	9.5E-01	na	na	6.3E-01	9.5E-01	--	na	6.3E-01	--	--	--	--	--	--	--	--	9.5E-01	--	na	6.3E-01
Hexachlorocyclopentadiene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	--	--	na	1.7E+04
Hexachloroethane ^C	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	--	--	na	8.9E+01
Hydrogen Sulfide	0	--	2.0E+00	na	--	--	2.0E+00	na	--	--	--	--	--	--	--	--	--	--	2.0E+00	na	--
Indeno (1,2,3-cd) pyrene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Iron	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Isophorone ^C	0	--	--	na	2.6E+04	--	--	na	2.6E+04	--	--	--	--	--	--	--	--	--	--	na	2.6E+04
Kepone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Lead	0	4.9E+01	5.6E+00	na	--	4.9E+01	5.6E+00	na	--	--	--	--	--	--	--	--	--	4.9E+01	5.6E+00	na	--
Malathion	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	na	5.1E-02	1.4E+00	7.7E-01	na	5.1E-02	--	--	--	--	--	--	--	--	1.4E+00	7.7E-01	na	5.1E-02
Methyl Bromide	0	--	--	na	4.0E+03	--	--	na	4.0E+03	--	--	--	--	--	--	--	--	--	--	na	4.0E+03
Methoxychlor	0	--	3.0E-02	na	--	--	3.0E-02	na	--	--	--	--	--	--	--	--	--	--	3.0E-02	na	--
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Monochlorobenzene	0	--	--	na	2.1E+04	--	--	na	2.1E+04	--	--	--	--	--	--	--	--	--	--	na	2.1E+04
Nickel	0	1.0E+02	1.1E+01	na	4.6E+03	1.0E+02	1.1E+01	na	4.6E+03	--	--	--	--	--	--	--	--	1.0E+02	1.1E+01	na	4.6E+03
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Nitrobenzene	0	--	--	na	1.9E+03	--	--	na	1.9E+03	--	--	--	--	--	--	--	--	--	--	na	1.9E+03
N-Nitrosodimethylamine ^C	0	--	--	na	8.1E+01	--	--	na	8.1E+01	--	--	--	--	--	--	--	--	--	--	na	8.1E+01
N-Nitrosodiphenylamine ^C	0	--	--	na	1.6E+02	--	--	na	1.6E+02	--	--	--	--	--	--	--	--	--	--	na	1.6E+02
N-Nitrosodi-n-propylamine ^C	0	--	--	na	1.4E+01	--	--	na	1.4E+01	--	--	--	--	--	--	--	--	--	--	na	1.4E+01
Parathion	0	6.5E-02	1.3E-02	na	--	6.5E-02	1.3E-02	na	--	--	--	--	--	--	--	--	--	6.5E-02	1.3E-02	na	--
PCB-1016	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1221	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1232	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1242	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1248	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1254	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1260	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB Total ^C	0	--	--	na	1.7E-03	--	--	na	1.7E-03	--	--	--	--	--	--	--	--	--	--	na	1.7E-03

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Pentachlorophenol ^C	0	7.7E-03	5.9E-03	na	8.2E+01	7.7E-03	5.9E-03	na	8.2E+01	--	--	--	--	--	--	--	--	7.7E-03	5.9E-03	na	8.2E+01
Phenol	0	--	--	na	4.6E+06	--	--	na	4.6E+06	--	--	--	--	--	--	--	--	--	--	na	4.6E+06
Pyrene	0	--	--	na	1.1E+04	--	--	na	1.1E+04	--	--	--	--	--	--	--	--	--	--	na	1.1E+04
Radionuclides (pCi/l except Beta/Photon)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Gross Alpha Activity Beta and Photon Activity (mrem/yr)	0	--	--	na	1.5E+01	--	--	na	1.5E+01	--	--	--	--	--	--	--	--	--	--	na	1.5E+01
Strontium-90	0	--	--	na	4.0E+00	--	--	na	4.0E+00	--	--	--	--	--	--	--	--	--	--	na	4.0E+00
Tritium	0	--	--	na	8.0E+00	--	--	na	8.0E+00	--	--	--	--	--	--	--	--	--	--	na	8.0E+00
Selenium	0	--	--	na	2.0E+04	--	--	na	2.0E+04	--	--	--	--	--	--	--	--	--	--	na	2.0E+04
Silver	0	2.0E+01	5.0E+00	na	1.1E+04	2.0E+01	5.0E+00	na	1.1E+04	--	--	--	--	--	--	--	--	2.0E+01	5.0E+00	na	1.1E+04
Sulfate	0	1.0E+00	--	na	--	1.0E+00	--	na	--	--	--	--	--	--	--	--	--	1.0E+00	--	na	--
1,1,2,2-Tetrachloroethane ^C	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Tetrachloroethylene ^C	0	--	--	na	1.1E+02	--	--	na	1.1E+02	--	--	--	--	--	--	--	--	--	--	na	1.1E+02
Thallium	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	--	--	na	8.9E+01
Toluene	0	--	--	na	6.3E+00	--	--	na	6.3E+00	--	--	--	--	--	--	--	--	--	--	na	6.3E+00
Total dissolved solids	0	--	--	na	2.0E+05	--	--	na	2.0E+05	--	--	--	--	--	--	--	--	--	--	na	2.0E+05
Toxaphene ^C	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Tributyltin	0	7.3E-01	2.0E-04	na	7.5E-03	7.3E-01	2.0E-04	na	7.5E-03	--	--	--	--	--	--	--	--	7.3E-01	2.0E-04	na	7.5E-03
1,2,4-Trichlorobenzene	0	4.6E-01	6.3E-02	na	--	4.6E-01	6.3E-02	na	--	--	--	--	--	--	--	--	--	4.6E-01	6.3E-02	na	--
1,1,2-Trichloroethane ^C	0	--	--	na	9.4E+02	--	--	na	9.4E+02	--	--	--	--	--	--	--	--	--	--	na	9.4E+02
Trichloroethylene ^C	0	--	--	na	4.2E+02	--	--	na	4.2E+02	--	--	--	--	--	--	--	--	--	--	na	4.2E+02
2,4,6-Trichlorophenol ^C	0	--	--	na	8.1E+02	--	--	na	8.1E+02	--	--	--	--	--	--	--	--	--	--	na	8.1E+02
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	6.5E+01	--	--	na	6.5E+01	--	--	--	--	--	--	--	--	--	--	na	6.5E+01
Vinyl Chloride ^C	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Zinc	0	--	--	na	6.1E+01	--	--	na	6.1E+01	--	--	--	--	--	--	--	--	--	--	na	6.1E+01
	0	6.5E+01	6.6E+01	na	6.9E+04	6.5E+01	6.6E+01	na	6.9E+04	--	--	--	--	--	--	--	--	6.5E+01	6.6E+01	na	6.9E+04

Notes:

- All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
- Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
- Metals measured as Dissolved, unless specified otherwise
- "C" indicates a carcinogenic parameter
- Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
Antidegradation WLAs are based upon a complete mix.
- Antideg. Baseline = $(0.25(WQC - \text{background conc.}) + \text{background conc.})$ for acute and chronic
= $(0.1(WQC - \text{background conc.}) + \text{background conc.})$ for human health
- WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens, Harmonic Mean for Carcinogens, and Annual Average for Dioxin. Mixing ratios may be substituted for stream flows where appropriate.

Metal	Target Value (SSTV)
Antimony	4.3E+03
Arsenic	9.0E+01
Barium	na
Cadmium	3.9E-01
Chromium III	2.5E+01
Chromium VI	6.4E+00
Copper	2.8E+00
Iron	na
Lead	3.4E+00
Manganese	na
Mercury	5.1E-02
Nickel	6.8E+00
Selenium	3.0E+00
Silver	4.2E-01
Zinc	2.6E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Washington Dulles International Airport

Permit No.: VA0089541

Receiving Stream: Stallion Branch, UT to Stallion Branch

Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information

Mean Hardness (as CaCO3) =	mg/L
90% Temperature (Annual) =	deg C
90% Temperature (Wet season) =	deg C
90% Maximum pH =	SU
10% Maximum pH =	SU
Tier Designation (1 or 2) =	1
Public Water Supply (PWS) Y/N? =	n
Trout Present Y/N? =	n
Early Life Stages Present Y/N? =	y

Stream Flows

1Q10 (Annual) =	0 MGD
7Q10 (Annual) =	0 MGD
30Q10 (Annual) =	0 MGD
1Q10 (Wet season) =	0 MGD
30Q10 (Wet season) =	0 MGD
30Q5 =	0 MGD
Harmonic Mean =	0 MGD
Annual Average =	0 MGD

Mixing Information

Annual - 1Q10 Mix =	0 %
- 7Q10 Mix =	0 %
- 30Q10 Mix =	0 %
Wet Season - 1Q10 Mix =	0 %
- 30Q10 Mix =	0 %

Effluent Information

Mean Hardness (as CaCO3) =	50 mg/L
90% Temp (Annual) =	deg C
90% Temp (Wet season) =	25 deg C
90% Maximum pH =	8 SU
10% Maximum pH =	SU
Discharge Flow =	30.7 MGD

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Acenaphthene	0	--	--	na	2.7E+03	--	--	na	2.7E+03	--	--	--	--	--	--	--	--	--	--	na	2.7E+03
Acrolein	0	--	--	na	7.8E+02	--	--	na	7.8E+02	--	--	--	--	--	--	--	--	--	--	na	7.8E+02
Acrylonitrile ^C	0	--	--	na	6.6E+00	--	--	na	6.6E+00	--	--	--	--	--	--	--	--	--	--	na	6.6E+00
Aldrin ^C	0	3.0E+00	--	na	1.4E-03	3.0E+00	--	na	1.4E-03	--	--	--	--	--	--	--	--	3.0E+00	--	na	1.4E-03
Ammonia-N (mg/l) (Yearly)	0	8.41E+00	2.43E+00	na	--	8.4E+00	2.4E+00	na	--	--	--	--	--	--	--	--	--	8.4E+00	2.4E+00	na	--
Ammonia-N (mg/l) (High Flow)	0	8.41E+00	1.24E+00	na	--	8.4E+00	1.2E+00	na	--	--	--	--	--	--	--	--	--	8.4E+00	1.2E+00	na	--
Anthracene	0	--	--	na	1.1E+05	--	--	na	1.1E+05	--	--	--	--	--	--	--	--	--	--	na	1.1E+05
Antimony	0	--	--	na	4.3E+03	--	--	na	4.3E+03	--	--	--	--	--	--	--	--	--	--	na	4.3E+03
Arsenic	0	3.4E+02	1.5E+02	na	--	3.4E+02	1.5E+02	na	--	--	--	--	--	--	--	--	--	3.4E+02	1.5E+02	na	--
Barium	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Benzene ^C	0	--	--	na	7.1E+02	--	--	na	7.1E+02	--	--	--	--	--	--	--	--	--	--	na	7.1E+02
Benzidine ^C	0	--	--	na	5.4E-03	--	--	na	5.4E-03	--	--	--	--	--	--	--	--	--	--	na	5.4E-03
Benzo (a) anthracene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Benzo (b) fluoranthene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Benzo (k) fluoranthene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Benzo (a) pyrene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Bis(2-Chloroethyl) Ether	0	--	--	na	1.4E+01	--	--	na	1.4E+01	--	--	--	--	--	--	--	--	--	--	na	1.4E+01
Bis(2-Chloroisopropyl) Ether	0	--	--	na	1.7E+05	--	--	na	1.7E+05	--	--	--	--	--	--	--	--	--	--	na	1.7E+05
Bromoform ^C	0	--	--	na	3.6E+03	--	--	na	3.6E+03	--	--	--	--	--	--	--	--	--	--	na	3.6E+03
Butylbenzylphthalate	0	--	--	na	5.2E+03	--	--	na	5.2E+03	--	--	--	--	--	--	--	--	--	--	na	5.2E+03
Cadmium	0	1.8E+00	6.6E-01	na	--	1.8E+00	6.6E-01	na	--	--	--	--	--	--	--	--	--	1.8E+00	6.6E-01	na	--
Carbon Tetrachloride ^C	0	--	--	na	4.4E+01	--	--	na	4.4E+01	--	--	--	--	--	--	--	--	--	--	na	4.4E+01
Chlordane ^C	0	2.4E+00	4.3E-03	na	2.2E-02	2.4E+00	4.3E-03	na	2.2E-02	--	--	--	--	--	--	--	--	2.4E+00	4.3E-03	na	2.2E-02
Chloride	0	8.6E+05	2.3E+05	na	--	8.6E+05	2.3E+05	na	--	--	--	--	--	--	--	--	--	8.6E+05	2.3E+05	na	--
TRC	0	1.9E+01	1.1E+01	na	--	1.9E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.9E+01	1.1E+01	na	--
Chlorobenzene	0	--	--	na	2.1E+04	--	--	na	2.1E+04	--	--	--	--	--	--	--	--	--	--	na	2.1E+04

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane ^C	0	--	--	na	3.4E+02	--	--	na	3.4E+02	--	--	--	--	--	--	--	--	--	--	na	3.4E+02
Chloroform ^C	0	--	--	na	2.9E+04	--	--	na	2.9E+04	--	--	--	--	--	--	--	--	--	--	na	2.9E+04
2-Chloronaphthalene	0	--	--	na	4.3E+03	--	--	na	4.3E+03	--	--	--	--	--	--	--	--	--	--	na	4.3E+03
2-Chlorophenol	0	--	--	na	4.0E+02	--	--	na	4.0E+02	--	--	--	--	--	--	--	--	--	--	na	4.0E+02
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	8.3E-02	4.1E-02	na	--	--	--	--	--	--	--	--	--	8.3E-02	4.1E-02	na	--
Chromium III	0	3.2E+02	4.2E+01	na	--	3.2E+02	4.2E+01	na	--	--	--	--	--	--	--	--	--	3.2E+02	4.2E+01	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.6E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.6E+01	1.1E+01	na	--
Chromium, Total	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Chrysene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Copper	0	7.0E+00	5.0E+00	na	--	7.0E+00	5.0E+00	na	--	--	--	--	--	--	--	--	--	7.0E+00	5.0E+00	na	--
Cyanide	0	2.2E+01	5.2E+00	na	2.2E+05	2.2E+01	5.2E+00	na	2.2E+05	--	--	--	--	--	--	--	--	2.2E+01	5.2E+00	na	2.2E+05
DDD ^C	0	--	--	na	8.4E-03	--	--	na	8.4E-03	--	--	--	--	--	--	--	--	--	--	na	8.4E-03
DDE ^C	0	--	--	na	5.9E-03	--	--	na	5.9E-03	--	--	--	--	--	--	--	--	--	--	na	5.9E-03
DDT ^C	0	1.1E+00	1.0E-03	na	5.9E-03	1.1E+00	1.0E-03	na	5.9E-03	--	--	--	--	--	--	--	--	1.1E+00	1.0E-03	na	5.9E-03
Demeton	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Dibenz(a,h)anthracene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Dibutyl phthalate	0	--	--	na	1.2E+04	--	--	na	1.2E+04	--	--	--	--	--	--	--	--	--	--	na	1.2E+04
Dichloromethane (Methylene Chloride) ^C	0	--	--	na	1.6E+04	--	--	na	1.6E+04	--	--	--	--	--	--	--	--	--	--	na	1.6E+04
1,2-Dichlorobenzene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	--	--	na	1.7E+04
1,3-Dichlorobenzene	0	--	--	na	2.6E+03	--	--	na	2.6E+03	--	--	--	--	--	--	--	--	--	--	na	2.6E+03
1,4-Dichlorobenzene	0	--	--	na	2.6E+03	--	--	na	2.6E+03	--	--	--	--	--	--	--	--	--	--	na	2.6E+03
3,3-Dichlorobenzidine ^C	0	--	--	na	7.7E-01	--	--	na	7.7E-01	--	--	--	--	--	--	--	--	--	--	na	7.7E-01
Dichlorobromomethane ^C	0	--	--	na	4.6E+02	--	--	na	4.6E+02	--	--	--	--	--	--	--	--	--	--	na	4.6E+02
1,2-Dichloroethane ^C	0	--	--	na	9.9E+02	--	--	na	9.9E+02	--	--	--	--	--	--	--	--	--	--	na	9.9E+02
1,1-Dichloroethylene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	--	--	na	1.7E+04
1,2-trans-dichloroethylene	0	--	--	na	1.4E+05	--	--	na	1.4E+05	--	--	--	--	--	--	--	--	--	--	na	1.4E+05
2,4-Dichlorophenol	0	--	--	na	7.9E+02	--	--	na	7.9E+02	--	--	--	--	--	--	--	--	--	--	na	7.9E+02
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,2-Dichloropropane ^C	0	--	--	na	3.9E+02	--	--	na	3.9E+02	--	--	--	--	--	--	--	--	--	--	na	3.9E+02
1,3-Dichloropropene	0	--	--	na	1.7E+03	--	--	na	1.7E+03	--	--	--	--	--	--	--	--	--	--	na	1.7E+03
Dieldrin ^C	0	2.4E-01	5.6E-02	na	1.4E-03	2.4E-01	5.6E-02	na	1.4E-03	--	--	--	--	--	--	--	--	2.4E-01	5.6E-02	na	1.4E-03
Diethyl Phthalate	0	--	--	na	1.2E+05	--	--	na	1.2E+05	--	--	--	--	--	--	--	--	--	--	na	1.2E+05
Di-2-Ethylhexyl Phthalate ^C	0	--	--	na	5.9E+01	--	--	na	5.9E+01	--	--	--	--	--	--	--	--	--	--	na	5.9E+01
2,4-Dimethylphenol	0	--	--	na	2.3E+03	--	--	na	2.3E+03	--	--	--	--	--	--	--	--	--	--	na	2.3E+03
Dimethyl Phthalate	0	--	--	na	2.9E+06	--	--	na	2.9E+06	--	--	--	--	--	--	--	--	--	--	na	2.9E+06
Di-n-Butyl Phthalate	0	--	--	na	1.2E+04	--	--	na	1.2E+04	--	--	--	--	--	--	--	--	--	--	na	1.2E+04
2,4 Dinitrophenol	0	--	--	na	1.4E+04	--	--	na	1.4E+04	--	--	--	--	--	--	--	--	--	--	na	1.4E+04
2-Methyl-4,6-Dinitrophenol	0	--	--	na	7.65E+02	--	--	na	7.7E+02	--	--	--	--	--	--	--	--	--	--	na	7.7E+02
2,4-Dinitrotoluene ^C	0	--	--	na	9.1E+01	--	--	na	9.1E+01	--	--	--	--	--	--	--	--	--	--	na	9.1E+01
Dioxin (2,3,7,8- tetrachlorodibenzo-p-dioxin) (ppq)	0	--	--	na	1.2E-06	--	--	na	na	--	--	--	--	--	--	--	--	--	--	na	na
1,2-Diphenylhydrazine ^C	0	--	--	na	5.4E+00	--	--	na	5.4E+00	--	--	--	--	--	--	--	--	--	--	na	5.4E+00
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	2.2E-01	5.6E-02	na	2.4E+02	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	2.4E+02
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	2.2E-01	5.6E-02	na	2.4E+02	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	2.4E+02
Endosulfan Sulfate	0	--	--	na	2.4E+02	--	--	na	2.4E+02	--	--	--	--	--	--	--	--	--	--	na	2.4E+02
Endrin	0	8.6E-02	3.6E-02	na	8.1E-01	8.6E-02	3.6E-02	na	8.1E-01	--	--	--	--	--	--	--	--	8.6E-02	3.6E-02	na	8.1E-01
Endrin Aldehyde	0	--	--	na	8.1E-01	--	--	na	8.1E-01	--	--	--	--	--	--	--	--	--	--	na	8.1E-01

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.9E+04	--	--	na	2.9E+04	--	--	--	--	--	--	--	--	--	--	na	2.9E+04
Fluoranthene	0	--	--	na	3.7E+02	--	--	na	3.7E+02	--	--	--	--	--	--	--	--	--	--	na	3.7E+02
Fluorene	0	--	--	na	1.4E+04	--	--	na	1.4E+04	--	--	--	--	--	--	--	--	--	--	na	1.4E+04
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	1.0E-02	na	--	--	--	--	--	--	--	--	--	--	1.0E-02	na	--
Heptachlor ^C	0	5.2E-01	3.8E-03	na	2.1E-03	5.2E-01	3.8E-03	na	2.1E-03	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	2.1E-03
Heptachlor Epoxide ^C	0	5.2E-01	3.8E-03	na	1.1E-03	5.2E-01	3.8E-03	na	1.1E-03	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	1.1E-03
Hexachlorobenzene ^C	0	--	--	na	7.7E-03	--	--	na	7.7E-03	--	--	--	--	--	--	--	--	--	--	na	7.7E-03
Hexachlorobutadiene ^C	0	--	--	na	5.0E+02	--	--	na	5.0E+02	--	--	--	--	--	--	--	--	--	--	na	5.0E+02
Hexachlorocyclohexane																					
Alpha-BHC ^C	0	--	--	na	1.3E-01	--	--	na	1.3E-01	--	--	--	--	--	--	--	--	--	--	na	1.3E-01
Hexachlorocyclohexane																					
Beta-BHC ^C	0	--	--	na	4.6E-01	--	--	na	4.6E-01	--	--	--	--	--	--	--	--	--	--	na	4.6E-01
Hexachlorocyclohexane																					
Gamma-BHC ^C (Lindane)	0	9.5E-01	na	na	6.3E-01	9.5E-01	--	na	6.3E-01	--	--	--	--	--	--	--	--	9.5E-01	--	na	6.3E-01
Hexachlorocyclopentadiene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	--	--	na	1.7E+04
Hexachloroethane ^C	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	--	--	na	8.9E+01
Hydrogen Sulfide	0	--	2.0E+00	na	--	--	2.0E+00	na	--	--	--	--	--	--	--	--	--	--	2.0E+00	na	--
Indeno (1,2,3-cd) pyrene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Iron	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Isophorone ^C	0	--	--	na	2.6E+04	--	--	na	2.6E+04	--	--	--	--	--	--	--	--	--	--	na	2.6E+04
Kepone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Lead	0	4.9E+01	5.6E+00	na	--	4.9E+01	5.6E+00	na	--	--	--	--	--	--	--	--	--	4.9E+01	5.6E+00	na	--
Malathion	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	na	5.1E-02	1.4E+00	7.7E-01	na	5.1E-02	--	--	--	--	--	--	--	--	1.4E+00	7.7E-01	na	5.1E-02
Methyl Bromide	0	--	--	na	4.0E+03	--	--	na	4.0E+03	--	--	--	--	--	--	--	--	--	--	na	4.0E+03
Methoxychlor	0	--	3.0E-02	na	--	--	3.0E-02	na	--	--	--	--	--	--	--	--	--	--	3.0E-02	na	--
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Monochlorobenzene	0	--	--	na	2.1E+04	--	--	na	2.1E+04	--	--	--	--	--	--	--	--	--	--	na	2.1E+04
Nickel	0	1.0E+02	1.1E+01	na	4.6E+03	1.0E+02	1.1E+01	na	4.6E+03	--	--	--	--	--	--	--	--	1.0E+02	1.1E+01	na	4.6E+03
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Nitrobenzene	0	--	--	na	1.9E+03	--	--	na	1.9E+03	--	--	--	--	--	--	--	--	--	--	na	1.9E+03
N-Nitrosodimethylamine ^C	0	--	--	na	8.1E+01	--	--	na	8.1E+01	--	--	--	--	--	--	--	--	--	--	na	8.1E+01
N-Nitrosodiphenylamine ^C	0	--	--	na	1.6E+02	--	--	na	1.6E+02	--	--	--	--	--	--	--	--	--	--	na	1.6E+02
N-Nitrosodi-n-propylamine ^C	0	--	--	na	1.4E+01	--	--	na	1.4E+01	--	--	--	--	--	--	--	--	--	--	na	1.4E+01
Parathion	0	6.5E-02	1.3E-02	na	--	6.5E-02	1.3E-02	na	--	--	--	--	--	--	--	--	--	6.5E-02	1.3E-02	na	--
PCB-1016	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1221	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1232	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1242	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1248	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1254	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1260	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB Total ^C	0	--	--	na	1.7E-03	--	--	na	1.7E-03	--	--	--	--	--	--	--	--	--	--	na	1.7E-03

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Pentachlorophenol ^C	0	7.7E-03	5.9E-03	na	8.2E+01	7.7E-03	5.9E-03	na	8.2E+01	--	--	--	--	--	--	--	--	7.7E-03	5.9E-03	na	8.2E+01
Phenol	0	--	--	na	4.6E+06	--	--	na	4.6E+06	--	--	--	--	--	--	--	--	--	--	na	4.6E+06
Pyrene	0	--	--	na	1.1E+04	--	--	na	1.1E+04	--	--	--	--	--	--	--	--	--	--	na	1.1E+04
Radionuclides (pCi/l except Beta/Photon)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Gross Alpha Activity Beta and Photon Activity (mrem/yr)	0	--	--	na	1.5E+01	--	--	na	1.5E+01	--	--	--	--	--	--	--	--	--	--	na	1.5E+01
Strontium-90	0	--	--	na	4.0E+00	--	--	na	4.0E+00	--	--	--	--	--	--	--	--	--	--	na	4.0E+00
Tritium	0	--	--	na	8.0E+00	--	--	na	8.0E+00	--	--	--	--	--	--	--	--	--	--	na	8.0E+00
Selenium	0	--	--	na	2.0E+04	--	--	na	2.0E+04	--	--	--	--	--	--	--	--	--	--	na	2.0E+04
Silver	0	2.0E+01	5.0E+00	na	1.1E+04	2.0E+01	5.0E+00	na	1.1E+04	--	--	--	--	--	--	--	--	2.0E+01	5.0E+00	na	1.1E+04
Sulfate	0	1.0E+00	--	na	--	1.0E+00	--	na	--	--	--	--	--	--	--	--	--	1.0E+00	--	na	--
1,1,2,2-Tetrachloroethane ^C	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Tetrachloroethylene ^C	0	--	--	na	1.1E+02	--	--	na	1.1E+02	--	--	--	--	--	--	--	--	--	--	na	1.1E+02
Thallium	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	--	--	na	8.9E+01
Toluene	0	--	--	na	6.3E+00	--	--	na	6.3E+00	--	--	--	--	--	--	--	--	--	--	na	6.3E+00
Total dissolved solids	0	--	--	na	2.0E+05	--	--	na	2.0E+05	--	--	--	--	--	--	--	--	--	--	na	2.0E+05
Toxaphene ^C	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Tributyltin	0	7.3E-01	2.0E-04	na	7.5E-03	7.3E-01	2.0E-04	na	7.5E-03	--	--	--	--	--	--	--	--	7.3E-01	2.0E-04	na	7.5E-03
1,2,4-Trichlorobenzene	0	4.6E-01	6.3E-02	na	--	4.6E-01	6.3E-02	na	--	--	--	--	--	--	--	--	--	4.6E-01	6.3E-02	na	--
1,1,2-Trichloroethane ^C	0	--	--	na	9.4E+02	--	--	na	9.4E+02	--	--	--	--	--	--	--	--	--	--	na	9.4E+02
Trichloroethylene ^C	0	--	--	na	4.2E+02	--	--	na	4.2E+02	--	--	--	--	--	--	--	--	--	--	na	4.2E+02
2,4,6-Trichlorophenol ^C	0	--	--	na	8.1E+02	--	--	na	8.1E+02	--	--	--	--	--	--	--	--	--	--	na	8.1E+02
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	6.5E+01	--	--	na	6.5E+01	--	--	--	--	--	--	--	--	--	--	na	6.5E+01
Vinyl Chloride ^C	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Zinc	0	--	--	na	6.1E+01	--	--	na	6.1E+01	--	--	--	--	--	--	--	--	--	--	na	6.1E+01
	0	6.5E+01	6.6E+01	na	6.9E+04	6.5E+01	6.6E+01	na	6.9E+04	--	--	--	--	--	--	--	--	6.5E+01	6.6E+01	na	6.9E+04

Notes:

- All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
- Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
- Metals measured as Dissolved, unless specified otherwise
- "C" indicates a carcinogenic parameter
- Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
Antidegradation WLAs are based upon a complete mix.
- Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
= (0.1(WQC - background conc.) + background conc.) for human health
- WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens, Harmonic Mean for Carcinogens, and Annual Average for Dioxin. Mixing ratios may be substituted for stream flows where appropriate.

Metal	Target Value (SSTV)	Note: do not use QL's lower than the minimum QL's provided in agency guidance
Antimony	4.3E+03	
Arsenic	9.0E+01	
Barium	na	
Cadmium	3.9E-01	
Chromium III	2.5E+01	
Chromium VI	6.4E+00	
Copper	2.8E+00	
Iron	na	
Lead	3.4E+00	
Manganese	na	
Mercury	5.1E-02	
Nickel	6.8E+00	
Selenium	3.0E+00	
Silver	4.2E-01	
Zinc	2.6E+01	

Public Notice – Environmental Permit

PURPOSE OF NOTICE: To seek public comment on a draft permit from the Department of Environmental Quality that will allow the release of storm water into a water body in Fairfax County, Virginia and Loudoun County, Virginia.

PUBLIC COMMENT PERIOD: June 18, 2009 to 5:00 p.m. on July 17, 2009

PERMIT NAME: Virginia Pollutant Discharge Elimination System Permit – Industrial Storm Water issued by DEQ, under the authority of the State Water Control Board.

APPLICANT NAME, ADDRESS AND PERMIT NUMBER: Metropolitan Washington Airports Authority, 1 Aviation Circle, Washington, DC 20001, VA0089541

NAME AND ADDRESS OF FACILITY: Washington Dulles International Airport, 44701 Propeller Court, Dulles, VA 20166

PROJECT DESCRIPTION: Metropolitan Washington Airports Authority has applied for a reissuance of a permit for the private Washington Dulles International Airport. The applicant proposes to release industrial storm water at a varying rate per rain or snow event into a water body. The facility proposes to release the industrial storm water in the Cub Run, UT to Cub Run, Dead Run, UT to Horsepen Run, Stallion Branch, and UT to Stallion Branch in Fairfax County and Loudoun County in the Potomac River watershed. A watershed is the land area drained by a river and its incoming streams. The permit will monitor the following pollutants to protect water quality: pH, Dissolved Oxygen, Conductivity, Propylene Glycol, Total Petroleum Hydrocarbons, BOD₅, Chemical Oxygen Demand, Total Suspended Solids, and Total Kjeldahl Nitrogen.

HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING: DEQ accepts comments and requests for public hearing by e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requestor, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. DEQ may hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit.

CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION: The public may review the documents at the DEQ-Northern Regional Office by appointment.

Name: Susan Mackert

Address: DEQ-Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193

Phone: (703) 583-3853 E-mail: susan.mackert@deq.virginia.gov Fax: (703) 583-3821

**State "Transmittal Checklist" to Assist in Targeting
Municipal and Industrial Individual NPDES Draft Permits for Review**

Part I. State Draft Permit Submission Checklist

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence.

Facility Name:	Washington Dulles International Airport
NPDES Permit Number:	VA0089541
Permit Writer Name:	Susan Mackert
Date:	September 19, 2008

Major []

Minor [X]

Industrial [X]

Municipal []

I.A. Draft Permit Package Submittal Includes:

	Yes	No	N/A
1. Permit Application?	X		
2. Complete Draft Permit (for renewal or first time permit – entire permit, including boilerplate information)?	X		
3. Copy of Public Notice?	X		
4. Complete Fact Sheet?	X		
5. A Priority Pollutant Screening to determine parameters of concern?	X		
6. A Reasonable Potential analysis showing calculated WQBELs?	X		
7. Dissolved Oxygen calculations?		X	
8. Whole Effluent Toxicity Test summary and analysis?		X	
9. Permit Rating Sheet for new or modified industrial facilities?	X		

I.B. Permit/Facility Characteristics

	Yes	No	N/A
1. Is this a new, or currently unpermitted facility?		X	
2. Are all permissible outfalls (including combined sewer overflow points, non-process water and storm water) from the facility properly identified and authorized in the permit?	X		
3. Does the fact sheet or permit contain a description of the wastewater treatment process?	X		
4. Does the review of PCS/DMR data for at least the last 3 years indicate significant non-compliance with the existing permit?		X	
5. Has there been any change in streamflow characteristics since the last permit was developed?		X	
6. Does the permit allow the discharge of new or increased loadings of any pollutants?		X	
7. Does the fact sheet or permit provide a description of the receiving water body(s) to which the facility discharges, including information on low/critical flow conditions and designated/existing uses?	X		
8. Does the facility discharge to a 303(d) listed water?	X		
a. Has a TMDL been developed and approved by EPA for the impaired water?	X		
b. Does the record indicate that the TMDL development is on the State priority list and will most likely be developed within the life of the permit?	X		
c. Does the facility discharge a pollutant of concern identified in the TMDL or 303(d) listed water?	X		
9. Have any limits been removed, or are any limits less stringent, than those in the current permit?		X	
10. Does the permit authorize discharges of storm water?	X		

	Yes	No	N/A
I.B. Permit/Facility Characteristics – cont.			
11. Has the facility substantially enlarged or altered its operation or substantially increased its flow or production?	X		
12. Are there any production-based, technology-based effluent limits in the permit?		X	
13. Do any water quality-based effluent limit calculations differ from the State's standard policies or procedures?		X	
14. Are any WQBELs based on an interpretation of narrative criteria?			X
15. Does the permit incorporate any variances or other exceptions to the State's standards or regulations?		X	
16. Does the permit contain a compliance schedule for any limit or condition?		X	
17. Is there a potential impact to endangered/threatened species or their habitat by the facility's discharge(s)?		X	
18. Have impacts from the discharge(s) at downstream potable water supplies been evaluated?	X		
19. Is there any indication that there is significant public interest in the permit action proposed for this facility?		X	
20. Have previous permit, application, and fact sheet been examined?	X		

Part II. NPDES Draft Permit Checklist

Region III NPDES Permit Quality Review Checklist – For Non-Municipals

II.A. Permit Cover Page/Administration		Yes	No	N/A
1.	Does the fact sheet or permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)?	X		
2.	Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?	X		

II.B. Effluent Limits – General Elements		Yes	No	N/A
1.	Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)?	X		
2.	Does the fact sheet discuss whether “antibacksliding” provisions were met for any limits that are less stringent than those in the previous NPDES permit?	X		

II.C. Technology-Based Effluent Limits (Effluent Guidelines & BPJ)		Yes	No	N/A
1.	Is the facility subject to a national effluent limitations guideline (ELG)?		X	
a.	If yes, does the record adequately document the categorization process, including an evaluation of whether the facility is a new source or an existing source?			X
b.	If no, does the record indicate that a technology-based analysis based on Best Professional Judgement (BPJ) was used for all pollutants of concern discharged at treatable concentrations?			X
2.	For all limits developed based on BPJ, does the record indicate that the limits are consistent with the criteria established at 40 CFR 125.3(d)?	X		
3.	Does the fact sheet adequately document the calculations used to develop both ELG and /or BPJ technology-based effluent limits?	X		
4.	For all limits that are based on production or flow, does the record indicate that the calculations are based on a “reasonable measure of ACTUAL production” for the facility (not design)?			X
5.	Does the permit contain “tiered” limits that reflect projected increases in production or flow?		X	
a.	If yes, does the permit require the facility to notify the permitting authority when alternate levels of production or flow are attained?			X
6.	Are technology-based permit limits expressed in appropriate units of measure (e.g., concentration, mass, SU)?	X		
7.	Are all technology-based limits expressed in terms of both maximum daily, weekly average, and/or monthly average limits?	X		
8.	Are any final limits less stringent than required by applicable effluent limitations guidelines or BPJ?		X	

II.D. Water Quality-Based Effluent Limits		Yes	No	N/A
1.	Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality?	X		
2.	Does the record indicate that any WQBELs were derived from a completed and EPA approved TMDL?	X		
3.	Does the fact sheet provide effluent characteristics for each outfall?	X		
4.	Does the fact sheet document that a “reasonable potential” evaluation was performed?	X		
a.	If yes, does the fact sheet indicate that the “reasonable potential” evaluation was performed in accordance with the State’s approved procedures?	X		
b.	Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?			X

II.D. Water Quality-Based Effluent Limits – cont.	Yes	No	N/A
c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have “reasonable potential”?			X
d. Does the fact sheet indicate that the “reasonable potential” and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations where data are available)?			X
e. Does the permit contain numeric effluent limits for all pollutants for which “reasonable potential” was determined?			X
5. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?			X
6. For all final WQBELs, are BOTH long-term (e.g., average monthly) AND short-term (e.g., maximum daily, weekly average, instantaneous) effluent limits established?			X
7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?			X
8. Does the fact sheet indicate that an “antidegradation” review was performed in accordance with the State’s approved antidegradation policy?	X		

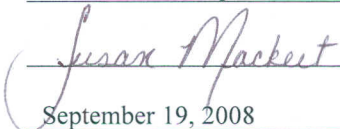
II.E. Monitoring and Reporting Requirements	Yes	No	N/A
1. Does the permit require at least annual monitoring for all limited parameters?	X		
a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver?			
2. Does the permit identify the physical location where monitoring is to be performed for each outfall?	X		
3. Does the permit require testing for Whole Effluent Toxicity in accordance with the State’s standard practices?		X	

II.F. Special Conditions	Yes	No	N/A
1. Does the permit require development and implementation of a Best Management Practices (BMP) plan or site-specific BMPs?	X		
a. If yes, does the permit adequately incorporate and require compliance with the BMPs?	X		
2. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?			X
3. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?	X		

II.G. Standard Conditions	Yes	No	N/A
1. Does the permit contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?	X		
List of Standard Conditions – 40 CFR 122.41			
Duty to comply	Property rights	Reporting Requirements	
Duty to reapply	Duty to provide information	Planned change	
Need to halt or reduce activity	Inspections and entry	Anticipated noncompliance	
not a defense	Monitoring and records	Transfers	
Duty to mitigate	Signatory requirement	Monitoring reports	
Proper O & M	Bypass	Compliance schedules	
Permit actions	Upset	24-Hour reporting	
		Other non-compliance	
2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for existing non-municipal dischargers regarding pollutant notification levels [40 CFR 122.42(a)]?	X		

Part III. Signature Page

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge.

Name	<u>Susan Mackert</u>
Title	<u>Environmental Specialist II</u>
Signature	<u></u>
Date	<u>September 19, 2008</u>